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ABSTRACT

This two-part curriculum and resource guide provides an undergraduate and graduate level course methodology in contemporary future studies and research. The objectives of this curriculum are to create awareness and appreciation of the fundamental concepts, methods, and limitations of future studies. The curriculum design is conceptual, general in nature, and designed to be used with topical content and focus provided by the instructor and/or the students. The curriculum outline of 15 free-standing modules includes topics on standard study procedure, the time-line, appraising futures reports, futures studies methods, change, alternative futures, forecastability, confidence in forecasts, attitudes toward futures, causality and futures, manageability of futures, values and futures, transcendental change, and stability. The learning resources guide is designed for use with the curriculum guide and includes suggested exercises, assignments, and references for each of the 15 modules; lists of basic reading references and useful 16mm films; and referral title lists of useful popular music recordings and future-oriented poems. (Author/DE)

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Futures Studies And Research

Curriculum Guide

By

David C. Miller * And Ronald L. Hunt, Ed.D. **

A modular,
introductory approach
designed for
class instruction
or self-study at the
college, graduate, and adult levels
and intended for use with

Futures Studies And Research
Learning Resources Guide

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The ADVENT® Program was organized in 1971 on the basis of a grant from the U.S. Office of Education. ADVENT® serves instructors and learners at the undergraduate, graduate, and adult levels who are seriously interested in exploring contemporary Futures Studies and Research. ADVENT® provides curriculum design support and develops learning materials and services in support of the field.

While the ADVENT® Program constantly evolves, in its present form the curriculum consists of 15 separate Learning Modules which may be used individually or in any sequence desired. Two Modules present the ADVENT® Standard Study Procedure, while the others deal with the following Core Concepts: The Time-Line, Appraising Futures Reports, Futures Studies Methods, Change, Alternative Futures, Forecastability, Confidence in Forecasts, Attitudes Toward Futures, Causality and Futures, Manageability of Futures, Values and Futures, Transcendental Change, and Stability.

All Core Concepts are presented in a concise outline format intended for elaboration by the instructor or learner as he explores topics in disciplines, academic fields, or problems and issues of interest to him.

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PREFACE

Introduction

It is by now beyond reasonable dispute that Futures Studies and Research (hereafter, FSR) has arrived on the intellectual scene and is not apt soon to depart. Why? Futurist and sociologist Daniel Bell offered one of the first and best explanations to which the reader is commended: "The Study of the Future," The Public Interest, Number 1, Fall, 1965, pages 119-130.

Just as the origins of any new intellectual departure can be traced to the societal climate in which the new departure appears, so it is reasonable to think that the subsequent development of the new departure is shaped by and relevant to that same societal climate.In this prefatory essay, we offer a general discussion of possible links between FSR and the societal climate in our era. Our remarks are intended to prompt discussion and debate and should be taken as suggestive rather than as definitive.

We begin by listing ten dilemmas and ten opportunities confronting humanity in our time. We then identify what seems to us to be the seven most central or fundamental aspects of FSR, and try to relate these to the dilemmas and opportunities already mentioned.

Ten Dilemmas In Our Era

A listing of fundamental human ills may consist of one item--"we exist"--or may be of infinite length. Our list is meant to be suggestive of our own perspective rather than exhaustive. Our list includes ten items:

1. We share no common vision.

"WE" in this and in all other items below refers simply to humanity, to all of us now living on this planet.

Advances in communications technology and transport technology have thrust us all willy nilly into one single, earth-wide "central place." But we are not ready for it. Even as Americans or Belgians or South Africans we are not ready for it. As Terrestrials, we are so far completely lost. What possible common vision can be shared by the starving wretch on the streets of Calcutta and the affluent multi-national corporate executive in Westport, Connecticut? Even the cataclysm of World War II resulted only in the United Nations--a mere shadow of its never self. Yet we know that the fate of Cedar Rapids, Iowa is bound inextricably to the fate of, say, the rice paddies of Viet Nam. In this surely lies a basic dilemma of our time.

2. Our sense of human continuity is shattered.

In the many millennia which preceded the rise of modern technology, human beings perforce struggled only to comprehend "the world" well enough to survive by adapting to it, by "fitting in." This basic premise of civilization has been substantially swept away during the course of the past century or so. Within limits so broad and vague that for many purposes they do not even exist, we have come to realize that we can make "the world" conform to our desires--if we are prepared to pay the ultimate price. In technology's yeasty youth, this basic transformation of the human condition was celebrated with unreserved joy. No longer was it a matter of Man Under Nature; now it had become a matter of Man Over Nature.

More recently, we have begun to see some of the hidden costs in the ultimate price. Now we are beginning to aspire to the status of Man In Nature. But in any case the seizure by men of powers once reserved to God or Nature has shattered the fundamental sense of inevitable continuity in human affairs, on the basis of which civilization evolved. Now few can ever be sure about much for long. Here is Alvin Toffler's famous Future Shock.

3. The scope of our engagements is too narrow.

Collective knowledge has in recent decades expanded much more rapidly than has the individual's capacity to acquire, absorb, and apply knowledge. Our unsuprising response has been to specialize. Each of us saws off that infinitesimal fraction of the whole which seems of most interest or value to him. As for the rest ...well...someone else...But we are beginning to see that this approach may bear a prohibitive cost. Intractable residues claimed by no one can create grave crises for us all. No one realized beforehand that Lake Erie was being murdered. Many of the most crucial bits of knowledge are elusive, embedded in complex relations among many more immediately obvious bits. We find that we must know more than we can know. Herein is a dilemma.

4. We cannot manage complexity and interdependency.

This is an activist elaboration of Point 3. above. Knowing that fragmentation of knowledge and issues is dangerous is one thing. Knowing what to do about it is quite another. Welfare reform, structural unemployment, health care delivery, mental health services--in these and in countless other matters we see the folly of the piecemeal approach but simply don't know how to improve our performance. A dilemma, surely.

5. Our societal institutions are obsolete.

Here again, the dilemma is an extension of the preceding one, but again it has even broader dimensions. We have already alluded to the shattering of our human sense of continuity in "the world." This development in its present dimensions occurred after the evolution of virtually all existing societal institutions and organizations. All such structures evolved in a world where continuity was the rule and discontinuity was the rare exception. Institutions and organizations all essentially have been created to regularize and stabilize predictable, recurrent societal functions: marriage, war, production, governance, etc. When we rage and rant about bureaucratic inertia we may forget that by their nature societal in-

stitutions and organizations always strive first to achieve what they were established to do: maintain some status quo. The dilemma arises in the extensive displacement of continuity by discontinuity as the prevalent societal experience. Most of our gravest challenges and our brightest opportunities arise from change, from discontinuity, phenomena which virtually no societal institution or organization can effectively address.

6. We cannot reconcile diversity and community.

Human beings apparently require both some sense of unique worth and some sense of communal identity with other human beings. Person-group relations always have been at the root of societal tension--sometimes with magnificent results, sometimes with tragic consequences. In our era, the shrinking globe forces into the immediate presence of each of us the complete range of human diversity. And this development is occurring in the substantial absence of any vision of world community. At all levels--from neighborhood to globe--we simply do not know how to celebrate both our differences and our similarities in any consistent fashion.

7. The person and the people are mutually isolated.

On its face, this dilemma may seem to contradict the one mentioned in Point 6. above. Essentially, however, it is another face of the same coin. Proximity per se--whether physical or through some medium--is no guarantee of communion. Familiarity truly can and often does breed contempt, suspicion, and hostility. The shrinking globe obliges us constantly to acknowledge how many "strangers" there actually are in our world, even as we find it more and more difficult to remain in touch with those who are "like us." This dilemma is perhaps nowhere more visible at present than in our agitated suburbias.

8. We cannot agree about aspirations, constraints, and priorities.

Perhaps this dilemma merely restates the absence of a common vision suggested in Point 1 above. Whether or not this is so, our complex, interdependent, technological society requires such a consensus but has yet to achieve it.

9. We cannot reformulate principles of justice and equity.

While this dilemma is subsumed under Point 8. above, it remains fundamental enough in its own right to deserve special mention. Intertwined with many others, this dilemma perhaps stems foremost from the dilemma of discontinuity. Discontinuity requires frequent redefinition and concurrence as to what are resources, rights, privileges, duties, and obligations. It seems that nearly everyone believes himself entitled by natural right to whatever he has or may be able to obtain in future. Redefinition of resources et al must always be viewed by some as destructive of their inherent just claims, while those who gain by redefinition are apt to see in their gains only an overdue acknowledgment of their just claims. So long as societal discontinuity is substantial and basic human attitudes remain the same, the reformulation of principles of justice and equity must remain a dilemma.

10. We do not trust each other. This dilemma requires no elaboration. It is in effect the dilemma, of which all the others named are merely reflections.

Ten Opportunities In Our Era

Listing contemporary human opportunities is more risky and controversial than listing contemporary human dilemmas. Any one or all opportunities listed here may be held by any reader either as not attainable, not fundamental, or as threats rather than opportunities. In our view, however, opportunities must be imagined before they can be perceived, and perceived before they can be exploited. If the reader finds our list unsatisfactory, we urge him to prepare his own in the interest of our common salvation.

1. We can improve our understanding and management of human behavior.

Futurist Olaf Helmer has coined the phrase "social technology" in referring to the many solid insights

we have about human behavior which cannot be directly supported by Grand Theory. Helmer's plea is that we ignore theoretical inadequacies and apply such "lore" wherever it proves useful. Beyond social technology, we seem to be on the brink of a new era in the behavioral sciences when new concepts, new methods, and new tools--especially the computer--may help us attain a much broader and much deeper understanding about "human nature."

2. We can learn to control the evolution of technology.

"Progress" with a capital "P" was long regarded simplistically as a matter of doing all that we could as soon as we could. From that perspective, Technology with a capital "T" was king and could do no wrong. Today, pessimists such as Jacques Ellul warn that the Technological Imperative is an irresistible Juggernaut whose momentum must bear us inevitably to our destruction. To us, the pessimistic case seems at least premature if not overstated, since only now are we deciding that we want to regulate the development and use of technology. While Technology Assessment, for instance, is little more than one first, faint beginning in this direction, in our view the emphasis properly should be placed on "beginning" rather than on "faint."

3. We can better balance competition and cooperation.

Universally, social behavior is some blend of competitive activity with cooperative activity. Competition breeds leaders, cooperation breeds lovers, and society requires both. Society must constantly readdress itself to the issue of when and where each type of behavior is most appropriate and useful. If as it appears society will be increasingly complex and sensitively interdependent, it seems to follow that society must be redesigned to place greater emphasis on cooperation and collaboration. While manufacturers need not necessarily compete less in the marketplace, they must be given adequate societal incentive to cooperate more in cleansing the environment, to cite a familiar example. And since human beings seem by their nature to be both competitive and cooperative, society can aspire to elicit the most appropriate behavior in any given circumstance.

4. We can reconcile the claims of reason and sentiment.

Reason is not necessarily identical with sanity, nor is sentiment always senseless. Our preoccupation with technology may have embued us with too much respect for whatever can be carefully counted or measured. "What is so rare as a day in May?" the poet inquired. Had his views weighed more heavily in the societal scales beside those of Detroit, perhaps the Los Angeles Basin today would be less a disaster area. By the same token, militant environmentalists who demand an instant end to all economic growth deny the claims of justice and equity as well as those of reason. We humans believe in and value many things which have not been and often cannot be "proven." Such being the case, we should be able to find new ways to bridge the often-critical gap between being "rational" and being "reasonable."

5. We can reconcile personal fulfillment and societal progress.

Max Stirner once wrote, "A people cannot be free otherwise than at the individual's expense." We in our era have the opportunity of refuting Stirner's thesis--at the risk of proving him correct. We must--and can--reexamine the nature of liberty in a technological society. Many of our former prerogatives obviously have been taken away by the complexity and interdependence of the society we have created. Less clearly--but equally certain--we have created new choices and options in profusion. Many new routes to personal fulfillment consistent with societal advancement can be uncovered in our new world.

6. We can find new methods by use of which we can agree about aspirations, constraints, and priorities.

Under historic societal circumstances of essential continuity, a system of governance based on a small, elite leadership given vague general mandates at infrequent intervals made sense. In our present and forseeable world, that system does not make sense. Now we must--and can--decentralize and de-permanentize every decision-making process, at least in their implementa-

tion aspects. The technology and the basic concepts required to achieve this reform already exist. What we must do next--and can--is rearrange societal incentives so that today's elite few--from President to Boy Scout Troop leader--understand and accept a fundamentally different decision-making process.

7. We can find new methods by use of which we determine the distribution of wealth and the allocation of resources.

Inheritance, chance, geographic concentration, and domination of the weak by the strong have been historically the major means used to decide the distribution of wealth and the allocation of resources. While none of these factors seems likely to disappear from society, it does appear that societal complexity and interdependence are introducing new factors. If the work of production is substantially capitalized and automated, some factor other than employment must be found to provide personal income. If the technological society is more and more subject to disruption and harrassment by the alienated and disadvantaged, society must give their claims earlier and more careful attention. As the loci of power and authority shift, we must--and can--exploit the transition to contain and hopefully even to redirect constructively the rising tide of unrest among the "have-nots" across town and across the globe.

8. We can begin building a workable global community.

The decline--not the disappearance--of the nation-state as the primary world instrument for security and insecurity is starkly foreshadowed all about us today. Large multi-national firms live in a world of their own, one in which national claims often are irrelevant or not enforceable. Environmental problems ignore national borders. Communication satellites are making many national practices absurd. The existing nuclear stalemate can become the basis of true disarmament if and only if the prerogatives of national sovereignty can be redefined. A truly world-

wide monetary system--perhaps even a worldwide economy--now seems only a few years distant. Practical forces arguing for global community have reached an unprecedented level and continue to strengthen rapidly. Ours is the opportunity to make constructive use of these new forces.

9. We can recapture a sense of influencing our own destiny.

In many ways, our human lot since 1900 has resembled that of a drunken sailor struggling desperately to retain his footing on a ship driven through a raging gale. In the United States, the comfortable images of the farm, the small town, and the neighborhood have been displaced by the images of Suburbia, the urban jungle, and Man on the Moon. We have endured simultaneous discontinuities in technology, politics, economics, culture, religion, and lifestyles. Small wonder that we often see ourselves today as meaningless bits of flotsam and jetsam swirled who-knows-where by who-knows-what. Yet if we can but exploit our many real opportunities--such as those mentioned here--we can aspire to replace our sense of total impotence with a sense of some influence over what happens to us.

10. We can recapture a sense of hope for the future.

Cynicism, fear, and pessimism always have cheap, safe routes to attention and esteem, at least since the days of Chicken Little and Cassandra. The prophet is honored if he preaches doom and events prove him correct. If he preaches doom but the sky remains in place, he is forgotten or forgiven amid the general sense of relief. Sir Thomas More coined the term Utopia in 1516 as the title for a book describing his imaginary perfect society. In our own era the term Dystopia has been coined because most of our imaginary societies describe worlds in which the worst has already happened, the worlds of 1984 and Brave New World.

Most contemporary prophets and seers, like Jeremiah of old, discern nothing but misery and disaster ahead--and of course they may be correct. On the other hand, we must beware of the principle of self-fulfilling prophecies. Whatever the actual future proves to be, it must be realized at least in part from among the many alternative futures we can imagine, hope for, and strive to attain. If we cannot even imagine a future worth having, chances are we cannot have one. On the other hand, we can imagine futures worth having if we can identify and work together to exploit some of the many rich opportunities which in our era lay at humanity's every hand.

The Societal Climate And FSR

There is no general agreement as to the nature, scope, and utility of Futures Studies and Research. There is not even general agreement on what the field--if it is a field--should be called: Futuristics, futurology, prognostics, and mellonology are among other names proposed.

Nonetheless, FSR seems to exhibit certain distinctive features, aspects, or characteristics which make it less like such older, better established disciplines as economics or psychology and more like the newer disciplines or fields, such as general systems theory, systems analysis and design, and cybernetics. While not provable, it is at least plausible to believe that FSR's distinctive features are at least in some measure attributable to that same societal climate which in part probably is responsible for tne appearance of FSR in the first place.

Among the features which strike us as distinctively characteristic of FSR are:

1. FSR is deductive.
2. FSR is topical.
3. FSR is transdisciplinary.
4. FSR exploits uncertainty.
5. FSR emphasizes interdependency and interaction.
6. FSR emphasizes dynamic processes.
7. FSR aspires to be valid and valued within all disciplines,professions,and issue sectors.

Each of these characteristic features of FSR is briefly discussed in the following paragraphs with the hope that the discussion will stimulate challenge, discussion and debate among FSR practitioners.

1. FSR is deductive.

"The future" is never immediately accessible to direct observation. We therefore must always make assumptions which structure our investigations. These assumptions we combine with our recollections of the past and our observations of the present to reach detailed conjectural conclusions about possible futures. Such a procedure inevitably proceeds from the general to the particular and so is intrinsically deductive. In our view, this feature of FSR is pertinent to Dilemma 3. in the earlier discussion.

2. FSR is topical.

As an intellectual endeavor, FSR is new, amorphous and broadly encompassing in its aspirations. Given this, FSR's topical approach was probably inevitable, at least until a more mature phase of development is reached. The topical approach--select an issue and probe it by whatever means seem fruitful--provides the structure, scope delimitation, and perspective which non-existing FSR theory cannot provide. The "topic", of course, may be as narrow and short-run as "the sale of widgets next week in Territory A," or as broad and long-run as "the future of Man." In its topical emphasis or point of departure, FSR reflects several of the Dilemmas mentioned earlier, and especially Dilemmas 1,2, and 3.

3. FSR is transdisciplinary.

In intellectual enterprise as in neighborhoods, the "newcomer" often may be the eagerest borrower. FSR leans heavily on many other fields, including modelling, simulation, gaming, opinion research, time-series analysis, and others--often thereby contributing to advance-

ment in those fields, as in the cases of the Delphi polling method or the cross-impact matrix analysis method. FSR is transdisciplinary by necessity, a circumstance which the present authors regard as a great virtue. In our view, this feature of FSR links it directly with Dilemmas 1,2,3,and 4 and Opportunities 2 and 3, all as discussed earlier in this essay.

4. FSR exploits uncertainty.

Any possible event which lies in the future has by definition not yet actually occurred and so is by nature more or less uncertain of being actualized. FSR makes an asset out of this intrinsic uncertainty by invoking the concept of alternative futures. A great many more things possibly could happen than actually will occur. In seeking to probe the range of possibilities rather than searching linearly for the future, we are enabled and encouraged to look in many directions at once. This systematic attempt to discover which roads may lead to which Romes often presents us with foreshadowings of many important problems and possibilities which otherwise might well have escaped our attention--thereby escaping our efforts to avoid or attain them. In our view, this feature of FSR links it with Dilemmas 1,2, 3,6,and 8 and with Opportunities 2 through 10--all as discussed earlier in this essay.

5. FSR emphasizes interdependency and interaction.

In any FSR investigation, one must early identify which are the most important present and possible future factors pertinent to the FSR topic at hand. Broadly speaking, the subsequent investigation itself can be viewed as an effort to discern how all these factors might interact in various permutations to yield various, significantly different alternative futures. Such "contingency analysis" is inherent in FSR. In our view, this feature links FSR in divers ways with all ten Dilemmas and with all ten Opportunities discussed earlier.

6. FSR emphasizes dynamic processes.

Concern about the future has grown rapidly as the future has become ever more evanescent and transitory. The U.S. space program is only one prominent experience among many which have instructed us that a present intent suitably sustained may deliver a distant future according to our designs. FSR is one among several new transdisciplines dedicated to bridging the gap between the "here and now" and the "there and then." FSR examines the trends, developments, and events which could carry us from some present state of affairs to some range of conjectural future states of affairs. FSR is thereby dedicated to the study of dynamic change processes in all dimensions. In our view, this feature links FSR with Dilemmas 2,5, and 6 and with all ten Opportunities as discussed earlier in this essay.

7. FSR aspires to be valid and valued within all disciplines, professions, and issue sectors.

Most of the older, more traditional disciplines stake out rather definite boundaries for their concern. Thus a doctoral candidate in physics would not normally submit a dissertation on aesthetics, nor would an economics professor usually be caught reading (or publishing in) an anthropological journal. There have been sound reasons for this division of labor. FSR, however--and whatever it may be--is incurably topical and eclectic. Any and every discipline, profession, or issue sector has a futures dimension, and FSR goes eagerly wherever it may be invited or can evoke interest. It seems likely that FSR's eclecticism will hinder or even prevent the development of a distinctive, highly insulated body of specialized FSR theory and practice. Any possible loss attributable to this situation will in our view be more than offset if in time FSR proves to be one among several new transdisciplines through which economists and political scientists can converse with sociologists and planners. In our view, this feature of FSR links it with all ten Dilemmas and all ten Opportunities as discussed earlier in this essay.

Conclusion

We have in this prefatory essay identified ten fundamental human dilemmas and ten fundamental human opportunities in our era. We also have identified seven distinctive and characteristic features of FSR, features which make it resemble older, more traditional disciplines much less than FSR resembles what we have called here the newer "transdisciplines," as exemplified by general systems theory, systems analysis and design, and cybernetics. And we have suggested that the characteristic features of FSR may at least in part be attributable to the societal climate in which FSR is developing, as suggested by the ten Dilemmas and ten Opportunities mentioned.

The observations offered in this Preface may or may not be "true" or "provable." Our remarks have been made not for the purpose of proving a case, but rather in order to suggest the perspective within which the FSR curriculum reported here was evolved. It is our further hope that our conjectures may contribute constructively to the ongoing dialog about the nature, scope, and utility of FSR.

Whether or not and, if so, to what extent the perspective suggested here has in fact guided the development of this FSR curriculum must be left to the reader to judge. Acknowledging from the outset that FSR is in its infancy, the curriculum has been designed in an open-ended, modular format. It is not intended or recommended that any reader try to use the entire curriculum exactly as it is presented. Rather it is hoped that the curriculum will be regarded as a browsing file, one among many sources from among which to choose points of departure in FSR.

Our modular format also facilitates easy deletions, additions, revisions, and substitutions within the overall curriculum as FSR matures. We believe that the best alternative future for this curriculum would be marked by a year or two years of varied, intensive experimentation followed by drastic revision. In this case, early obsolescence not only has been planned for, it is fervently to be desired...To future futures curricula, hail!

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Introduction To Futures Studies Concepts and Methods:

A Curriculum Guide

Objectives

The objectives of this curriculum are:

1. To create an awareness of and some critical appreciation for some fundamental concepts and methods employed in futures studies.

2. To create an awareness of and some critical appreciation for the utility and limitations of futures studies as an intellectual activity.

3. To provide a solid yet flexible introductory futures studies learning/teaching methodology which can be used:

   *a. At more than one academic achievement level, although primarily at the first-year graduate student level.

   b. Within the perspective of any academic or professional specialty.

   c. To study any futures topic or issue whatsoever.

   d. By an instructor in a class whose students represent one, several, or many undergraduate majors.

   e. By a graduate adviser directing graduate students engaged in independent study.

   f. By a graduate student engaged in undirected independent study.

*While this curriculum guide is intended primarily for graduate course-work at the first-year graduate level, it is believed that the guide may in some cases be useful for other purposes as listed above.

Scope and Sequence

Scope

This is an introductory curriculum. As such, it

exposes students to most concepts and methods used in futures research and futures study. Most topics are treated in a cursory manner of necessity. Learning Guide references are provided with each topic so that instructors or students who desire to treat given topics in greater depth may consult the professional literature. The only topic treated in depth is an original futures studies teaching/learning method, the Standard Study Procedure.

Sequence

The curriculum offered is by design conceptual and extremely general in nature. The curriculum is designed to be used with topical content and focus provided by the instructor and/or the students. In any given course, it is doubtful that the complete curriculum outlined here could or even should be treated. Which curriculum topics are treated in a given course--and in which order--must be decided in each case by the instructor.

For that reason, the curriculum outline is presented as a series of "free-standing modules." That is, any topic of interest may be presented as the relevance of that topic becomes apparent. Any curriculum topic may be preceded or followed by any other. A basic Introduction to the curriculum is provided separately and may be used with whichever topic is treated first.

In the broadest sense, the curriculum offers two basic components: (1) The Standard Study Procedure, and (2) A set of Core Concepts. The Standard Study Procedure is presented in Learning Modules One and Two, which should both be presented in the order given if the Standard Study Procedure is to be used. Otherwise, each Core Concept is treated in one separate Larning Module. The Standard Study Procedure may be used with or without the Core Concept Learning Modules. In the same way, any or all Core Concept Learning Modules may be used with or without the Standard Study Procedure Learning Modules.

List of Learning Modules

LM 1 The Standard Study Procedure, Part I
LM 2 The Standard Study Procedure, Part II
LM 3 The Time-Line
LM 4 Appraising Futures Reports
LM 5 Futures Studies Methods
LM 6 Change
LM 7 Alternative Futures
LM 8 Forecastability
LM 9 Confidence in Forecasts

LM 10 Attitudes Toward Futures
LM 11 Causality and Futures
LM 12 Manageability of Futures
LM 13 Values and Futures
LM 14 Transcendental Change
LM 15 Stability

Standard Introduction*

*This introduction should be used with whichever Learning Module is presented first.

Objectives

1. To introduce the concept of Alternative Futures.
2. To explain that the curriculum takes a reasoned rather than an intuitive approach to futures studies.
3. To identify the two broad components in the curriculum: Standard Study Procedure and Core Concepts.

Presentation Time

Fifteen to twenty-five minute lecture, plus time for discussion.

Exercises, Assignments, References

Consult Learning Guide

Topical Outline

1. Alternative Futures: Logically, there is no period of time which can be thought of as the future in the same sense that we can speak of the present. No event is certain until it has actually occurred. Prior to its occurrence, any event or state of affairs is only one among many possibilities. Each different possible future occurrence or state of affairs may properly be called an alternative future.

2. Why is it useful to speculate about alternative futures if there is no single, fixed future? Such speculation is useful only if we accept the view that we ourselves can exercise some choices in shaping futures. That view is accepted as fundamental in this curriculum.

3. There are two fundamental approaches to conjecturing

about possible alternative futures: Intuition and Reason.

4. Intuition is an ancient and widespread approach used to try and foresee and foretell futures. Astrologers, fortune tellers, diviners, and all of us who "play hunches."

5. Reason, too, has been used since ancient times to foresee futures. Knowledge of the seasons and of movements of stars in the heavens have long been used in navigation and agriculture. Many other examples.

6. This course is based on reasoned conjecture rather than on Intuition, even though both are ancient, important, and equally honorable.

7. Two broad components offered in the course: a set of Core Concepts and a Standard Study Procedure.

8. Each Core Concept in the Set of Core Concepts presents a fundamental idea which can be used in speculating about alternative possible futures. (Refer to list and read).

9. The Standard Study Procedure is based on careful, systematic study or observation of any topic or Pattern whose alternative futures interests or concerns you. On the basis of your observation, an equally systematic forecast can be made and reported.

10. The Core Concepts and the Standard Study Procedure may be applied to any study topic at all, whether selected by the student or assigned by the instructor.

11. The concepts and methods presented in this course are intended only to be "take-off points." They are neither final nor ultimate. You should design and test your own concepts and study methods.

12. Use of the Standard Study Procedure is optional, at the discretion of the student or instructor.

13. Use of the Core Concepts is optional, at the discretion of the student or instructor. Any number of Core Concepts presented may be used or omitted, in any sequence desired.

Learning Module 1: THE STANDARD STUDY PROCEDURE, PART I /LM1/

Objectives:

1. To explain the principle, "Foresight Through Insight," on which the Standard Study Procedure is based.

2. To present and discuss the role of the Observer in the Standard Study Procedure.

3. To present and discuss the concept of the Pattern in the Standard Study Procedure.

4. To present and discuss the concept of the Environment in the Standard Study Procedure.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In studying alternative futures, some method or system--no matter how inadequate--is better than no method or system.

2. The Standard Study Procedure is one method or system for studying alternative futures. It is a way to begin. Use another method if you prefer. But some method is essential.

3. The SSP is based on the principle, "Foresight Through Insight." Meaning: the better informed we are and the more clearly we understand a topic in its present state, the better able we shall be to conjecture intelligently about its alternative futures.

4. Every observation involves three basic factors: the Observer, the Pattern, and the Environment.

5. The Observer has several basic decision tasks to complete:

   a. Select topic or Pattern for observation.
   b. Clarify nature of his interest in Pattern.

c. Decide what he hopes to gain through observation.
d. Plan and conduct his observation.
e. Make and report a series of critical decisions about the Pattern and the Environment in which it was observed (see below).
f. Different Observers of the same Pattern in the same Environment may have quite different interests, make quite different observations, and report quite different findings.

6. The Pattern is a generalized concept we can use to define and describe any study topic we choose. Use of the Pattern concept forces us to emphasize central or critical features and relationships, thus maximizing understanding and insight. This in turn improves our foresight, that is, our capacity to conjecture intelligently about the Pattern's possible alternative futures.

7. The Observer must complete the following Pattern description tasks:

a. Name the Pattern accurately and completely.
b. Identify the Key Elements in the Pattern.
c. Identify the Key Attributes of each Key Element.
d. Identify the Key Relations of each Key Element.

8. A Pattern may exist in many different dimensions or environments simultaneously: in space, in time, in society, etc.

9. A basic Pattern accommodates much individual variation within its form, e.g. all snowflakes are much alike, yet every snowflake is unique.

10. The Environment consists of the setting or collection of features in which the Pattern is contained or expressed.

11. The Environment of a Pattern is usually very complex. The challenge is to decide which aspects of the Environment are of critical importance to the Pattern under observation.

12. The Observer must complete the following Environment description tasks:

a. Fix the scope or boundaries of the Environment considered. /LM1&2/
b. Identify Key Interfaces between PATTERN and ENVIRONMENT.
c. Identify Key Environmental Resources.
d. Identify Key Environmental Constraints.

13. Under Point 8 above, it was noted that a Pattern may exist in many different Environments simultaneously. In describing any Pattern's Environment, the Observer must indicate all critical Environments and must fix the scope or boundaries for each Environment identified.

14. The distinction between an Environmental Resource and an Environmental Constraint is often difficult, and ultimately is always a matter of the Observer's own best critical judgment.

Learning Module 2: THE STANDARD STUDY PROCEDURE, PART II

Objectives:

1. To present and discuss the Observation Report Form.
2. To present and discuss basic forecasting standards.
3. To present and discuss the Forecast Report Form.
4. To discuss the limits and utility of the Standard Study Procedure.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. The Observation Report Form is used to make sure that every observation task required by the Standard Study Procedure has been accomplished (see LM 1), and that a systematic report has been made for every task.

2. Use of the Observation Report Form is optional, but offers two advantages: (a) makes it easier to look up facts when you are making a subsequent revision or extension of an earlier observation; (b) makes it easier to identify agreements and disagreements when the same topic is being observed by several persons.

3. Consult a copy of the Observation Report Form at this point (see pages A-11 to A-14 following).

4. Three general instructions for Observation Report Form:

   a. A separate copy of the Form must be completed for each observation.
   b. All items must be completed, but in any order desired.
   c. Any item may be continued on a separate, numbered page if more space is needed.

5. Completed Observation Report Form provides the basis for making a Forecast about the Pattern observed because of the "Foresight Through Insight" principle explained in LM 1 (Point 3).

6. A forecast is only one type of futures report. Other types of futures reports are discussed in Learning Module 4. The forecast, however, is the standard futures report used in the Standard Study Procedure because it is the most useful--although also the most difficult to make.

7. A forecast must meet seven basic forecasting standards:

   a. Identified as either non-prescriptive or prescriptive. (a non-prescriptive forecast is one in which forecaster is equally interested in all most probable alternative futures. A prescriptive forecast is one in which forecaster is more interested in certain alternative futures than in others, because he hopes to achieve or avoid them through planning and action).

   b. Future time-interval covered by forecast must be clearly identified.

   c. The environments and the scope and boundaries considered for each environment must be clearly identified (See LM 1, Point 12).

   d. The forecaster's own critical assumptions and judgments must be clearly stated.

   e. Information used in forecast--and its sources--must be clearly indicated.

f. The specific changes or differences forecast must be clearly stated. /LM2/

g. The forecaster's level of confidence in his own forecast must be clearly stated.

8. The Forecast Report Form is used in the Standard Study Procedure to make sure that the seven basic forecasting standards listed above are satisfied, and that a systematic report of forecast has been made.

9. Consult a copy of the Forecast Report Form at this point (see pages A-15 to A-26 following).

10. Three general instructions for Forecast Report Form:

a. Forecast Report Form must be used in conjunction with an Observation Report Form completed previously.

b. All items must be completed, but in any order desired.

c. Forecast Report Form should be as detailed and comprehensive as possible. Use as many extra numbered continuation pages as required.

11. Forecast Report Form requires you to make a systematic forecast of future alternatives in the Pattern and Environmental descriptions given previously on the Observation Report Form. For that reason, information recorded on the Observation Report Form must be copied or consulted at many points while completing the Forecast Report Form.

12. Forecast Report Form also requires you to indicate level of confidence in the many individual forecasts required by the Form, and in the overall forecast as well.

13. The Standard Study Procedure has now been presented in detail. Now let's mention some of its limits and restrictions:

a. Makes use of reason only, even though intuition is an ancient and powerful factor in trying to foresee and shape future events.

b. Even within the framework of reason, SSP relies mainly on logical analysis, de-emphasizes rational synthesis. Both analysis and synthesis are important in studying alternative futures:

analysis in understanding how something is and synthesis in conjecturing about all the different ways something could be in futures.

14. SSP also employs extensive structure and detail. Is all this structure and detail necessary? Almost certainly not--for any given person on any particular occasion. Yet we find it difficult to think and to discuss with others about possible futures because we have no common framework of concepts to share. This course does offer a comprehensive, detailed framework.

15. Any given instructor, student, or class should pick and choose from the course elements only those elements which seem useful or interesting to them for their purposes. Course elements are "free standing" and may be used in any number or sequence desired.

16. The course offers only a set of conceptual tools. It consciously avoids specifying topical content. Its purpose is to help you begin learning how to think about alternative futures. What to think about must be your own decision.

17. Your interests, opinions, and judgments about alternative futures are as "authoritative" and valid as anyone elses. "Experts" and "authorities" about futures research may have a greater number of relevant facts and may have thought harder and longer about them. Yet human values, priorities, needs, and desires are the basic factors which will shape our human futures most. In such matters, we are all equally authoritative.

ADVENT FORM I:

OBSERVATION REPORT FORM Page 1

General Instructions:

1. Complete one copy of this Form for every separate observation made.

2. All items must be completed, but may be completed in any order.

3. To encourage critical conciseness, limited space is provided. Whenever longer replies are essential, continue that item on a separate blank page, number the page, and indicate that number in the space provided.

Item Number:

1. This Observation begun (day, month, year):

_____

and completed:

_____

2. Observer's full name:_____

Street_____City_____

State _____ZIP_____Phone_____

3. Observer is a:_____
(Examples: "corporate planner," "student")

4. What Pattern was observed?(give complete,accurate name)

_____
(Example: "Primary Nuclear Family")

ADVENT FORM I: Observation Report Form, Page 2

5. Why are you interested in this Pattern?
(25 words or less)

_____

_____

_____

6. What do you hope to gain by your observation?
(25 words or less)

_____

_____

_____

7. What Time-Interval was considered in making your observation?

_____
(Examples: "past ten years," "today,")

8. What Environments were considered, and what scope or boundary was fixed for each?

Env. A. _____

Scope _____

Env. B. _____

Scope _____

Env. C. _____

Scope _____

(continued on page ___)

Example:

Env. X : "Economic" Scope: "U.S."

9. What are the Key Elements in this Pattern? For each one, what are its Key Attributes? Its Key Relations?

Key Element A _____
(Primary Nuclear Family example: "Mother")

Key Attributes: a. _____

b. _____

c. _____
(Example for Mother: "Age," "Race")

Key Relations: a. _____

b. _____

c. _____
(Example for Mother: "To husband")

Key Element B _____

Key Attributes: a. _____

b. _____

c. _____

Key Relations: a. _____

b. _____

c. _____

Key Element C _____

Key Attributes: a. _____

b. _____

c. _____

Key Relations: a. _____

b. _____

 _____

10. What are the Key Pattern/Environment Interfaces?

Between Pattern and: a. _____

b. _____

c. _____

(Examples for Primary Nuclear Family:
a. "to social traditions"
b. "to employment structure"
c. "domestic relations laws")

(continued on page ___)

11. What are the Pattern's Key Environmental Resources?

K.E.R. a. _____

b. _____

c. _____

12. What are the Pattern's Key Environmental Constraints?

K.E.C. a. _____

b. _____

c. _____

(continued on page ___)

13. In the remaining space below, make your own Summary Evaluation of your Observation. How complete was it? How accurate? What was omitted? How might it have been extended or improved?

ADVENT FORM II:

FORECAST REPORT FORM

General Instructions:

1. Before this Form can be used, an ADVENT Form I (Observation Report Form) must be completed.

2. All items must be completed, but may be completed in any order.

3. This Form is only a basic outline. Make your Forecast as complete and detailed as you can. Use as many extra pages as you need to. Number each extra page, and indicate page numbers in the appropriate spaces provided on this Form.)

Item Number:

1. This Forecast begun (day, month, year):

   _____

   and completed:

   _____

2. Forecaster's full name: _____

   Street _____ City _____

   State _____ ZIP _____ Phone _____

3. Forecaster is a: _____
   (Examples: "corporate planner," "student")

4. What Pattern was Forecast made for? (give complete, accurate name)

   _____
   (Example: "Primary Nuclear Family")

5. Why did you make a Forecast for this Pattern?

_____

_____

_____

(continued on page ___)

6. What do you hope to gain by your Forecast?

_____

_____

_____

(continued on page ___)

7. What future Time-Interval was considered in making your Forecast?

_____

(Examples: "next ten years," "this year")

8. What Environments were considered, and what scope or boundary was fixed for each?

Env. A. _____

Scope _____

Env. B. _____

Scope _____

Env. C. _____

Scope _____

(continued on page ___)

Example:

Env. X: "Political" Scope: "My home state"

9. Is this a: NON-Prescriptive Forecast?____

Prescriptive Forecast?____

(Check ONE. If you are uncertain about the difference, please consult Learning Module Two.)

10. Do you forecast that this Pattern will endure until the most distant Time-Point you cited in Item 7 above? Explain your Forecast, and cite pertinent information sources:

YES ___ NO ___ UNCERTAIN ___

_____

_____

_____

(continued on page ___)

11. Look back to the Observation Form (FORM I), Item 9, in which you listed the Key Elements for this Pattern. Of those you listed, which do you forecast will no longer be Key Elements as of the most distant Time-Point you cited in Item 7 above? Explain your Forecast, and cite pertinent information sources.

K.E. A._____

B._____

C._____

_____

_____

_____

(continued on page ___)

12. Look again at Form I, Item 9. Of the Key Elements you listed there for this Pattern, which ones do you forecast WILL STILL BE Key Elements as of the most distant Time-Point you cited in Item 7 above? Explain your Forecast, and cite pertinent information sources.

K.E. A. _____

B. _____

C. _____

_____ ___

_____

_____

(continued on page ___)

13. Looking at Item 12 above, consider the Key Attributes for every Key Element listed there. Then in the spaces below make your Forecast for each Key Element, indicating which will no longer be Key Attributes as of the most distant Time-Point you cited in Item 7 above. Explain your Forecast, and cite pertinent information sources.

K.E. A. _____

Displaced Key Attributes. a. _____

b. _____

c. _____

K.E. B. _____

Displaced Key Attributes. a. _____

b. _____

c. _____

13. (continued)

K.E. C. _____

Dis-placed Key Attri-butes.
a. _____
b. _____
c. _____

_____

_____

_____

(continued on page ___)

14. Look once more at Item 12 above. Consider for every Key Element listed there, what new Key Attributes will have emerged as of the most distant Time-Point you cited in Item 7 above. Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

K.E. A. _____

New Key Attri-butes.
a. _____
b. _____
c. _____

K.E. B. _____

New Key Attri-butes.
a. _____
b. _____
c. _____

K.E. B. _____

New Key Attri-butes.
a. _____
b. _____
c. _____

14. (continued)

K.E. C. _____

New a. _____

Key b. _____
Attri-
butes. c. _____

_____

_____

_____

(continued on page ___)

15. Look once more at Item 12 above. Consider for every Key Element listed there, which Key Relations will be displaced as of the most distant Time-Point you cited in Item 7 above. Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

K.E. A. _____

Dis- a. _____
placed
Rela- b. _____
tions.
c. _____

K.E. B. _____

Dis- a. _____
placed
b. _____
Rela-
tions. c. _____

K.E. C. _____

Dis- a. _____
placed
b. _____
Rela-
tions. c. _____

15. (continued)

_____

_____

_____

(continued on page ___)

16. Look once more at Item 12 above. Consider for every Key Element listed there, what new Key Relations will have emerged as of the most distant Time-Point you cited in Item 7 above. Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

K.E. A. _____

New a. _____

Key b. _____

Rela-

tions. c. _____

K.E. B. _____

New a. _____

Key b. _____

Rela-

tions. c. _____

K.E. C. _____

New a. _____

Key b. _____

Rela-

tions. c. _____

_____

_____

_____

(continued on page ___)

17. Considering this Pattern as a whole, what new Key Elements do you forecast will emerge as of the most distant Time-Point you cited in Item 7 above? And what will be the Key Attributes and the Key Relations of each of these new Key Elements? Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

New Key Element 1. _____

Its Key Attributes.
a. _____
b. _____
c. _____

Its Key Relations.
a. _____
b. _____
c. _____

New Key Element 2. _____

Its Key Attributes.
a. _____
b. _____
c. _____

Its Key Relations.
a. _____
b. _____
c. _____

New Key Element 3. _____

Its Key Attributes.
a. _____
b. _____
c. _____

17. (continued)

New Key Element (continued) 3. _____

Its Key Relations. a. _____

b. _____

c. _____

_____

_____

_____

(continued on page ___)

18. Now, look back to the Observation Form (FORM I, Item 10, in which you listed this Pattern's Key Pattern/Environment Interfaces. Of the Interfaces listed there, which ones do you forecast will no longer be Key Interfaces as of the most distant Time-Point you cited in Item 7 above? Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

Displaced Key Pattern/Environment Interfaces:

1. _____

2. _____

3. _____

_____

_____

_____

(continued on page ___)

19. Next, what new Key Pattern/Environment Interfaces do you forecast will emerge for this Pattern as of the most distant Time-Point you cited in Item , above? Make your forecast in the spaces provided below, then explain it and cite pertinent information sources.

NEW Key Pattern/Environment Interfaces:

1. _____

2. _____

3. _____

_____

_____

_____

(continued on page ___)

20. Now, look back to the Observation Form (FORM I, Item 11), in which you listed this Pattern's Key Environmental Resources. Of the Resources you listed, which do you forecast will no longer be Key Environmental Resources as of the most distant Time-Point you cited in Item 7 above? Make your Forecast in the spaces provided below, then explain it and cite pertinent information sources.

Displaced Key Environmental Resources:

1. _____

2. _____

3. _____

_____

_____

_____

(continued on page ___)

21. Next, what new Key Environmental Resources do you forecast will emerge for this Pattern as of the most distant Time-Point you cited in Item 7 above? Make your forecast in the spaces provided below, then explain it, and cite pertinent information sources.

    New Key Environmental Resources:

    1. _____

    2. _____

    3. _____

    _____

    _____

    _____

    (continued on page ___)

22. Now, look back to the Observation Form (FORM I), Item 12, in which you listed this Pattern's Key Environmental Constraints. Of the Constraints you listed, which do you forecast will no longer be Constraints as of the most distant Time-Point you cited in Item 7 above? Make your Forecast in the spaces cited below, then explain it and cite pertinent information sources.

    Key Environmental Constraints Removed:

    1. _____

    2. _____

    3. _____

    _____

    _____

    _____

    (continued on page ___)

23. Next, what new Key Environmental Constraints do you forecast will emerge for this Pattern as of the most distant Time-Point you cited in Item 7 above? Make your forecast in the spaces provided below, then explain it, and cite pertinent information sources.

New Key Environmental Constraints:

1. _____

2. _____

3. _____

_____

_____

_____

24. As an ADVENT Forecaster, you have just made a series of 14 separate forecasts about the Pattern you named in Item 4 above. Now in the spaces provided below, please estimate how much confidence you have in your own forecasts.

Use this rating scale: 1 = LITTLE CONFIDENCE
2 = SOME CONFIDENCE
3 = GREAT CONFIDENCE

Item	Rating	Item	Rating	OVERALL RATING
10	_____	17	_____	
11	_____	18	_____	
12	_____	19	_____	
13	_____	20	_____	_____
14	_____	21	_____	
15	_____	22	_____	
16	_____	23	_____	

Learning Module 3: THE TIME-LINE /LM3/

Objectives:

1. To suggest that the nature of Time is not understood.
2. To present a linear-notation model of Time in which Time is defined by events and in turn is used to interrelate events.
3. To discuss three concepts of "future time" in terms of the model.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. No one actually knows what "Time" is--or even if that is a meaningful question to be raised. The mystery persists at two levels: (1) at the level of philosophy and physics, and (2) at the level of our own everyday lives.

2. The word "now" or the phrase "the present" as we ordinarily use it may refer to nearly any time interval at all--from"this instant" to "in our time."

3. In order to think about alternative futures and to discuss our thoughts clearly with others, we require some reasonably clear and consistent--if arbitrary--model or notation system for Time. The model offered in this curriculum is The Time-Line.

4. The Time-Line actually is a line segment--that is, the Time-Line refers only to any finite or bounded time-interval we choose to consider.

5. The Time-Line has its "beginning" at its left end point and its "end" at its right end point. These terms refer to whatever "event" we may select to define the Time-Line. A class period is an example of an "event" which defines a Time-Line--often a Time-Line whose duration is 60 minutes.

6. Within the Time-Line of every event, each participant in the event has an internal, psychological awareness of "this instant." In the Time-Line model, this internal awareness is called Time-Point P. At any given Time-Point P, the "past" is that portion of the event which preceded Time-Point P, while the "future" is that portion of the event which will succeed Time-Point P.

7. Two or more events may be temporally related to each other through a broader or longer Master Time-Line encompassing both events. Calendars are Master Time-Lines based on historic events (e.g., the Birth of Christ) through which many events may be located along the Time-Line relative to each other.

8. The "beginning" of an event defining a Time-Line is always treated as fixed and known, e.g. one's birth date. The "end" of an event is always treated as fixed but may or may not be known, e.g., the certainty of one's death but the uncertainty of one's actual date of death. Time-Point P, the fleeting internal sense of the instant is always treated as a moving point which travels along the Time-Line away from the "beginning" toward the "end."

9. Time-Point P, is a psychological sense of the instant and, as such, has no objectively measurable duration. However, the subjective events which often define for us significant Time-Lines do have objectively measurable duration--e.g. such events as "eating this meal," "watching this movie," etc. Thus we need some different term to signify subjective events subjectively thought of as "now" which have a measurable duration. In the Time-Line model, such events are thought of as occupying a Time-Interval N.

10. Because events defining Time-Interval N are subjective, Time-Interval N has no absolute or fixed duration. Time-Interval N may have such variable durations as "this airplane flight," "what I am doing today," or "walking from here to there." Such events may be thought of as defining a series of different "Actual Nows". The duration of Actual Now is subjective and highly variable, thus Time-Interval N also may vary greatly from one situation to another, or from one location to another along the Time-Line of an event.

11. Time-Point P--that fleeting internal, unmeasurable awareness of the instant--may or may not be identified in relation to Time-Interval N, the Actual Now. When Time-Point P is identified, however, it always is located somewhere within Time-Interval N and always travels from the "beginning" of Time-Interval N towards the "end" of Time-Interval N. /LM3/

12. When Time-Point P is identified within Time-Interval N, it will be seen that a part of any Time-Interval N--Actual Now--actually is a part of "the past" while another part of the Actual Now in question actually is a part of "the future." However, when Time-Point P is not identified, every time-point within Time-Interval N is equally a part of "now" and no time-point within Time-Interval N falls within either "the past" or "the future."

13. Turning from "the present" to "the future", the Time-Line enables us to identify three separate aspects of future time: the actual future, the post-actual future, and the relative future.

14. Since the Time-Line must always be defined in terms of some event, at any given time-point during the course of that event the uncompleted segment of the event defines the actual future of that event--that is, the portion of the event which will occur between Time-Point P or Time-Interval N and the completion of the event.

15. Because the Time-Line is defined in terms of some event, all time-intervals which will not occur until the event in question has been completed must occur in the post-actual future of that event. (Example: If the event defining a Time-Line is one's own lifetime, any event or time-interval which will occur only after one's own death lies in one's post-actual future).

16. Both the actual future and the post-actual future are defined in relation to some Time-Point P or some Time-Interval N--that is, in relation to some Actual Now. Often, however, we think and speak of future time as measured from some time-point or time-interval other than the Actual Now. (Example: If we reflect "how things might have turned out differently" had we taken a different course at some point in the actual past, we are speculating about an alternative (not actual) future as viewed from some time-point in the past. Similarly, we may speculate about events in a distant future which are contingent on earlier events in the nearer future.

In both cases, we are thinking about the future from the perspective of a time-point other than the Actual Now. Future time so considered can be thought of as the Relative future).

Learning Module 4: APPRAISING FUTURES REPORTS

Objectives:

1. To identify and characterize three non-forecast types of futures reports.
2. To define the forecast by its essential characteristics.
3. To identify and discuss the four factors which must be judged in appraising any forecast.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Four basic types of futures reports:

   a. Prophecies and predictions
   b. Projections and speculations
   c. Methods and concepts
   d. Forecasts

2. Prophecies and predictions. Make explicit assertions--often ambiguous--about future developments or events. Usually do not include the information or reasoning on which they are based. Do not indicate likelihood of predicted event's actual occurrence or non-occurrence. May or may not specify time or date of predicted occurrence.

3. Projections and speculations. Draw descriptive inferences about possible future developments or events, based on information about present and assumptions about the direction and rate of change. Do not indicate likelihood of conjectural events' actual occurrence. Probes possible alternative futures by completing a series of "If....then" propositions. (If U.S. population grows at its present rate, then U.S. population will total 240 million by 2000).

4. Methods and concepts. Deal with attitudes, ideas, and research and study methodologies. This curriculum is an example. Are not specifically addressed to any particular topic or issue. Offer no predictions or judgments about future events or developments. Focus on intellectual tools which can be used in preparing any of the other types of futures reports. /LM4/

5. Forecasts. A futures report which:

   a. Treats a clearly specified topic.
   b. Identifies and describes the most significant possible future developments or events pertinent to the topic.
   c. Arranges these possible future developments or events into a set of two or more alternative futures. (At its simplest, this consists of two alternative futures, in one of which a specified development or event does occur, and in the other of which it does not occur).
   d. Specifies the significant circumstances in which an alternative future may be realized as the actual future.
   e. Makes estimates about the chances or probabilities that each alternative future may be realized as the actual future.

6. The definition given above defines the "ideal" or "complete" forecast. Not every forecast will--or even needs to--satisfy each of the characteristics listed. Any forecast may be judged against these criteria, however.

7. The reader or prospective user of a forecast should make a systematic, critical appraisal of the forecast before taking it seriously. A forecast can be appraised from each of four different standpoints:

   a. The forecaster
   b. The forecasting effort
   c. The forecast content
   d. The forecast's utility

8. The forecaster. The following questions should be considered:

   a. Is the forecaster accurately and clearly identified?
   b. Is the forecaster qualified to make this forecast?
   c. Is the forecaster's intent stated clearly and honestly?

/LM4/

9. The forecasting effort. The following questions should be asked:

   a. Is the forecast topic accurately and clearly identified? (1) In its scope--what is included, what is excluded)? (2) Its central issues? and (3) Its time horizon (how far ahead does it look)?
   b. Is the forecasting methodology clearly explained? (1) Which forecasting methods were used, and why? (2) Exactly how was the method(s) applied to this topic?
   c. Was earlier, related work consulted and is it cited?
   d. What basic information sources were consulted and cited?
   e. Is the effort level indicated? (how much work was done)
   f. Are special problems encountered identified and discussed?
   g. Has the forecaster indicated his own confidence level in his forecast?

10. The forecast content. The following questions should be asked:

   a. Is the forecast non-prescriptive or prescriptive? (See LM 2, Point 7a)
   b. If the forecast is prescriptive, what is its purpose?
   c. Is the forecast content consistent with the forecast topic?
   d. Are central forecast issues satisfactorily explored?
   e. Have possible future developments or events been organized into a set of possible alternative futures?
   f. Has each significant alternative future been satisfactorily explored?
   g. Has the forecaster distinguished clearly between what he believes are "facts" and what are his own statements of judgments?
   h. Are the findings and conclusions consistent with and supported by the assumptions, facts, and judgments presented by the forecast?
   i. Has the forecaster stated clearly and defended his own level of confidence in his forecast?

11. The forecast's utility.

   a. The utility of any forecast must be judged by the prospective user in light of his own needs and interests.

b. Any forecast may serve one or more of the following ends: /LM4&5/

1. source of organized, evaluation information about a particular topic
2. provoke personal or group speculation about alternative futures for a topic
3. serve as a demonstration of one or more forecasting methods
4. identify some or all most-probable and least-probable significant alternative futures for a topic
5. serve as a basis for making judgments and decisions
6. serve as a basis for making plans or taking action

Learning Module 5: FUTURES STUDIES METHODS

Objectives:

To identify and briefly discuss six basic methods used in Futures Studies: Authority, Polling, Projection, Qualitative Conjecture, Quantitative Conjecture, and Modeling and Simulation.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. This Learning Module identifies and briefly discusses six basic methods used in studying Alternative Futures. This Module does <u>not</u> attempt to teach the use of such methods.

2. Six basic methods used in studying Alternative Futures are:

   a. Authority Method
   b. Polling Method
   c. Projection Method
   d. Qualitative Conjecture Method
   e. Quantitative Conjecture Method
   f. Modeling and Simulation Method

3. Authority Method. This is the oldest and simplest of all methods used to foresee possible futures. Basically, the method is to select a topic whose futures interest us, select an expert or authority whose foresight on that topic is trustworthy, and ask the authority to give his views.

4. Some faults of the Authority Method are:

   a. It may be difficult to decide who is an "authority" on a given topic, e.g. "The American Way," or "Progress."
   b. Equally trustworthy authorities may disagree with each other.
   c. What the "authority" believes should happen may color his estimates about whay may happen.
   d. The "authority" may find it difficult to explain and defend the reasoning behind his opinions.

5. Polling Method. An extension of the Authority Method, except that a group of experts or judges are used, rather than one.

6. Delphi Method as an example of a Polling Method. Developed by Theodore Gordon and Olaf Helmer at RAND Corporation. A topic is selected for forecasting, and a group of experts are recruited. A number of possible developments which would affect the future of the topic are identified. In two or more rounds of polling by mail, the experts are asked to estimate the probability of each possible development's actually occurring. Each expert is also asked to estimate when each possible development may occur, and what its impact on the forecast topic might be. After each round, Delphi managers summarize the panel's estimates, return to each a comparison of his forecasts with the group's average forecasts, and asks each expert to revise or defend his personal forecast in light of the group forecast. All this is done by mail so that more experts may participate and so that no expert's reputation or strength of personality can in itself affect other experts' estimates.

7. Delphi forecasting is only one among many Polling Methods which are used in studying alternative futures. Others which may be used:

   a. Public opinion polls
   b. Permanent panels of experts
   c. Series of essays on one assigned topic
   d. Special issues of periodicals
   e. Special study groups
   f. Special programs and meetings

8. Advantages and disadvantages of Polling Methods. /LM5/

Advantages: An efficient way to gather and organize many facts, estimates, and opinions pertinent to the alternative futures of a topic. Also reveals the nature and extent of agreement and disagreement among those polled, may reveal what is known and not known.

Disadvantages: As in the Authority Method, selection of qualified experts may be difficult. When the poll reveals sharp differences of opinion, whose views are to be accepted? May also be difficult to probe deeper to discover reasons for agreement or disagreement.

9. Projection Method. The projection method requires first of all an accepted description of the present. In population projections, for example, we must begin by knowing what the present population is. Next, we must make some explicit assumptions about future rates of change in present circumstances, as when we assume any given future population growth rate. Finally, we apply our assumptions to our description and arrive at our projection. We can and often do make more than one projection about a topic, each based on different assumptions. The Census Bureau makes five different projections of future U.S. population.

10. While most projections are quantitative, many are qualitative as when we project possible future changes in existing social sentiments, which cannot be counted or measured and so are not quantitative projections.

11. Projections are often confused with forecasts. A projection indicates only what would happen if the stated assumptions held. As such, a projection makes no estimate as to the probability that its assumptions will actually hold true for the future. When such estimates are added to a projection, the projection may then be regarded as a forecast.

12. Advantage and disadvantages of projection method:

Advantage: Facts and assumptions are stated clearly, and the content of the projection usually is definite and explicit.

Disadvantages: A projection often is mistaken for a forecast, either by readers or by the author. Also,

/LM5/

it may often be difficult to describe present circumstances and/or assumptions well enough to enable projection.

13. Conjecture Method. As used in this curriculum, Conjecture refers to any logical, reasoned, systematic effort to identify and describe possible significant changes pertinent to a forecast topic and to estimate which among these changes may most probably occur.

14. Qualitative Conjecture. Qualitative Conjecture is any Conjecture whose most important content cannot be counted or measured: words, pictures, sounds, music, etc.

15. Quantitative Conjecture. Quantitative Conjecture is any Conjecture whose most important content can be counted or measured: numbers, change rate estimates, probability estimates, percentage changes, numerical scales, graphs, etc. Neither form of Conjecture is either superior or inferior to the other.

16. Two examples of Qualitative Conjecture are the Scenario and the Future History. (The difference between the two was first noted by Michael Marien, Syracuse University). A Scenario is a background narrative which in general terms describe some alternative future on the basis of specified facts and assumptions; the Scenario is limited to a narrative describing some one future time-point. A Future History is similarly a narrative based on specified facts and assumptions. The Future History, however, traces the course of developments and events over a time-interval in order to explain how a particular set of circumstances set forth in a Scenario developed out of preceding sets of circumstances. As in many science fiction stories, Future Histories and Scenarios often are interwoven in a single narrative, but the difference between them should be carefully noted.

17. Two examples of Quantitative Conjecture are the Cross-Impact Matrix and the Logic Tree. The Cross-Impact Matrix is simply a table in which many possible significant future developments and events are doubly arrayed: once in the rows and once in the column. In each intersection, the forecaster (one or in groups) is required to make a numerical estimate of how much each trend affects the others. Purpose of the Cross-Impact Matrix is to identify the most significant interactions for

further study. The Logic Tree is a general name for many similar methods. All such methods involve specifying the possible alternative outcomes for any given event, then proceeding to treat each such outcome as a separate subsequent event. /LM5/

18. Advantages and Disadvantages of Conjecture Methods.

Advantages: Incomplete or inconsistent assumptions and items of information are apt to be identified. May provide broader, deeper treatment than other methods.

Disadvantages: May require a prohibitive effort for satisfactory treatment. May be too complex or effort-consuming for adequate evaluation by users. May--especially in qualitative forms--convey a misleading sense of "reality."

19. Modeling and Simulation Method. A model is any greatly simplified replica of an object or phenomenon. For example, the game Monopoly is a greatly simplified replica of the real estate development field; only a few essential features are kept. Relative to its original, any model is compact and so inexpensive to make and easy to manipulate.

20. Models may be either static or dynamic. A static model is one whose parts or elements cannot be varied with respect to each other. For example, a carved statue of a human figure is a static model. A dynamic model is one whose parts or elements can be varied with respect to each other. For example, the cars, wheels, and whistle of a model train.

21. Models may be physical or abstract. The statue and model train mentioned above are physical models. The organization chart of a corporation is an abstract model.

22. Any dynamic model may be manipulated to discover how the model will perform under a variety of circumstances. For example, players may manipulate the pieces of the Monopoly game. Such manipulation of a dynamic model is called simulation. In playing Monopoly, players are engaging in a dynamic simulation of the real estate development field.

23. Models used for dynamic simulation can be used to study alternative futures. For example, we could develop a Monopoly-like game to model either an

imaginary or an actual corporation. Then we could specify significant possible future developments or events which would affect the corporation and see how the players of the game might behave in such alternative futures.

24. Advantages and Disadvantages of Modeling and Simulation.

    Advantages: Enable us to explore quickly many alternative futures for complex topics. Help us learn more about the nature of the topic in trying to simulate it.

    Disadvantages: Models may often require more knowledge, time, and effort to develop and test than is available. Results may not be easily understood or credible to those not intimately involved with design and development of the model. Insufficient or incorrect design decisions may yield inadequate or deceptive results.

Learning Module 6: CHANGE

Objectives:

1. To contrast Qualitative Change with Quantiative Change.
2. To identify three typical standards by which Change Rates may be measured.
3. To identify five basic Change Rates often encountered.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Two basic kinds of Change can be identified: Quantitative Change and Qualitative Change.

2. Quantitative Change is any kind of change which can be counted, measured or described in quantitative terms. (Examples: changes in income (in dollars); changes in population (in numbers of people); changes in temperature (in degrees)).

3. Qualitative Change is any kind of change which cannot be counted, measured or described in

quantitative terms. (Examples: change in affection; change in beliefs; change in perception). /LM6

4. Sometimes, a quantitative change may cause or be accompanied by a qualitative change. (Examples: A large income change may result in a lifestyle change. A large population change may result in political or cultural changes. A large temperature change may result in behavioral changes).

5. Sometimes, a qualitative change may cause or be accompanied by a quantitative change. (Examples: a change in affection may affect movement patterns or allocation of time. A change in beliefs may affect church donations. A change in perception may affect purchasing habits).

6. Every Change must occur at some rate. Change Rate simply refers to the speed at which one set of characteristics or circumstances is transformed into another.

7. In attempting to observe or measure Change Rates, some Comparison Standard is required. That is, the observer must decide that the Change observed is occurring slowly or rapidly as compared with something else.

8. Many different Comparison Standards may be used in measuring Change Rates. Three typical Comparison Standards are given here, for purposes of illustration.

9. One Comparison Standard which can be used in measuring Change Rates is the estimated capacity to change. (Examples: If the Change observed involves the water level in a river, Change Rates can be measured or expressed in terms of how much the river can hold. If the Change involves resource depletion, Change Rates can be expressed in terms of how much of a resource is left to deplete).

10. A second Comparison Standard which can be used in measuring Change Rates is to compare changes at one location with changes elsewhere. (Examples: If the change observed involves the growth of a child, his growth can be compared with the growth of one or more children his age. If the change observed involves income, any given family's income changes can be compared with average family income changes).

11. A third Comparison Standard which can be used in measuring Change Rates is to compare present Change Rates against past Change Rates. (Example: If

the change observed involves urban population growth, we can compare the amount of time required to attain the most recent million additional population with the amount of time required to attain the second most recent million. If the change observed involves solid waste disposal, we can compare the increased amount of garbage this year with the increased amount for last year).

12. Because Change Rates are always expressed in terms of a Comparison Standard, it is important to decide in each case what the most valid Comparison Standard is. The apparent Change Rate may vary greatly depending on the Comparison Standard used.

13. Often Change Rates occur in definite patterns, over time. Among many distinctive Change Rates, five commonly encountered are:

    a. Zero Change
    b. Step Change
    c. Linear Change
    d. Exponential Change
    e. Asymptotic Change

14. Zero Change refers simply to the absence of change. That is, a given condition at one time-point is identical with that at another time-point. (Examples: There is Zero Change over time in the amount of water (all forms) available in the Earth and its atmosphere. There is Zero Change in the measured length of one foot from one time to another).

15. Step Change refers to a sudden change occurring at a single time-point. (Examples: There is a Step Change in illumination levels when a lamp is switched on in a dark room. There is a Step Change in spatial relations when someone who is "inside" goes "outside.").

16. Linear Change refers to the case in which the amount of change occurring in Time-Interval 1 is identical with the amount of change occurring in the next Time-Interval, Time-Interval 2. (Examples: People get exactly one year older each and every year. When driving at a fixed speed, the distance travelled in one hour is exactly the same as the distance travelled in the next hour).

17. Exponential Change refers to the case in which the amount of change occurring in Time-Interval 1 is smaller or larger by some multiplier than the

amount of change occurring in the next Time-Interval, Time-Interval 2. (Examples: If one cell divides in T1, each half divides into two more in T2, and each quarter divides into two more, exponential change is occurring with a multiplier (exponent) of two. If one person tells four others a bit of gossip in T1, each of those tells four others the gossip in T2, and each of those tells four others in T3, exponential change (in the number of persons who have heard) is occurring with a multiplier (exponent) of four). /LM6&7/

18. Asymptotic Change refers to the case in which change first occurs very rapidly and then more slowly, approaching zero change as it loses its capacity for further changes. (See Point 9 above). (Examples: An infant grows very rapidly but grows much more slowly as he approaches maturity, after which his height (at least) never increases. The first few people at a party are able to move about easily, but the ability of anyone to move at all falls off rapidly as the party room becomes filled with people).

Learning Module 7: ALTERNATIVE FUTURES

Objectives:

1. To present the basic concept of alternative futures.
2. To discuss some basic relations among different alternative futures.
3. To discuss some practical considerations about alternative futures which the forecaster must take into account.

Presentation Time:

About one hour, plus time for questions and discussions.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In considering possible futures for any topic, many different possible developments and events must be considered.

2. Each separate possible development or event may have any of the following relations with any or all others:

/LM7/

a. Mutually inclusive. (If one event occurs, the other must. (Example: If I marry you, you will marry me).

b. Mutually exclusive. If one event occurs, the other cannot. (Example: If a tossed coin comes up heads, it cannot come up tails).

c. Dependent (The outcome of one event determines the outcome of the other. (Example: If I am to eat dinner this evening, then dinner must be prepared before mealtime).

d. Independent (The outcome of one event is not determined by the outcome of the other. (Example: The plane will leave whether or not I reach the airport by departure time).

3. Individual possible significant developments or events each have a unique set of such relations with all other possible significant developments or events. Taken singly--in turn--each such set of relations represents one alternative future. The number of such individual alternative futures is usually very large, and often for practical purposes is infinite.

4. Forecasters, however, usually do not consider each separate possible development or event in isolation from the others. Rather, the forecaster usually identifies one or a few sets of the most probable and most significant developments and events. The forecast is then organized around this set or these sets as a whole (Example: Population forecasts usually are based on the following set of developments and events: (1) birth rates, (2) death rates, (3) migration rates).

5. In dealing with an entire set of possible significant developments or events, the forecaster must sort out the basic relations of each member of the set to the others, as listed in Point 2 above. This procedure in effect generates a set of alternative futures. That is, under certain circumstances some possible developments and events must occur, others cannot occur, and still others may or may not occur. As different circumstances are considered, the groupings of developments and events will shift. Each different set of circumstances thus generates a different alternative future.

6. Even when dealing with sets of possible significant developments and events--rather than with individual ones--the number of possible alternative futures which could be considered often is too large for the forecaster to manage. Often, therefore, the forecaster must decide which alternative futures to consider and which to ignore. /LM77

7. Some practical guidelines which the forecaster may use in deciding which alternative futures to consider and which to ignore are as follows:

   a. These alternative futures in which the greatest number of possible significant developments or events are included should be considered first.

   b. Those alternative futures in which the extent or impact of change or difference (compared with the present) is most should be considered next.

   c. Those alternative futures in which the effect of each single development or event is greatest should be considered next.

   d. This procedure can be used to explore the range or variety of possible alternative futures. On this basis, the forecaster can then decide which alternative futures within this range most deserve his attention.

8. Many times, different alternative futures may be somewhat interchangeable. (Example: Any given future U.S. population total may be reached by many different combinations of birth rates, death rates, and migration rates. In making his forecast, the forecaster must decide if he is most interested only in the <u>end result</u> or if he must also consider <u>alternative routes to the same end result</u>).

9. The screening procedure outlined in Point 7 above--combined with the point made in Point 8 above--suggests two different bases for selecting alternative futures to probe out of a much larger set of alternative futures which might be studied:

   a. The forecaster may concentrate his attention on the <u>most probable</u> alternative futures. These are those which could be attained by the greatest number of different routes, as in Point 8 above.

b. The forecaster instead may concentrate his attention on what he judges to be the most significant alternative futures, regardless of how probable they may be. While the criterion for significance will vary from forecaster to forecaster, often the forecaster will judge most significant those alternative futures which are least like the present.

c. Combinations of (a) and (b)--especially alternative futures which are judged to be both most probable and most significant--are often presented in forecasts.

10. Because the number of possible alternative futures is usually so much larger than the number which can be explored, a forecast may omit or under-emphasize one or more extremely important alternative futures. Such forecast omissions or distortions most often arise from:

    a. Too narrow or too rigid a definition of forecast topic.

    b. A foreshortened forecasting time horizon, which misses crucial developments which may be expected immediately beyond the period covered by the forecast.

11. Every forecast is limited because what might be done is infinite while resources are not. This limit is clearly revealed in deciding how many--and which ones--alternative futures are to be investigated. The greater the number and variety of alternative futures considered, the better the forecast may be, but the greater is the effort required. One practical middle ground is to explore at least a few extremely different and contrastive alternative futures so that the "range" of possibilities is somewhat clearer. Then alternative futures in the "middle ground" may be explored in greater detail.

Learning Module 8: FORECASTABILITY

Objectives:

1. To present a basic definition of Forecastability.
2. To identify and discuss four basic factors which determine Forecastability limits for any forecast topic.

Presentation Time: /LM8/

About one hour, plus time for questions and discussions.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. As discussed in Learning Module 4 (Point 5), a Forecast is a type of futures report which:

   a. Treats a clearly specified topic.
   b. Identifies and describes the most significant possible future developments or events pertinent to the topic.
   c. Arranges these possible future developments or events into a set of two more more alternative futures.
   d. Specifies the significant circumstances in which an alternative future may be realized as the actual future.
   e. Makes estimates about the chances or probabilities that each alternative future may be realized as the actual future.

2. Forecastability. Given the above definition of a forecast, Forecastability refers to the scope and limits within which the five tasks identified above can be completed for any given forecast topic.

3. The forecastability of any given topic is determined by four factors:

   a. Continuities (nature, extent)
   b. Discontinuities (nature, extent)
   c. Scheduling and Timing (nature and extent of errors)
   d. Manageability (nature, extent)

4. Continuities.

   a. Continuity in a forecast topic refers to:

      (1) any perceived relations between or among separate aspects of a topic. (Example: Employment and Income are two directly related aspects of the topic, Economy).

      (2) any perceived relations between a topic and other topics. (Example: Technology

(TopicA) is directly related to Science (Topic B) and to Invention (Topic C).

b. A continuity may be physical (adjoining houses on a street), temporal (identical clock time within any Time Zone), cultural (we are all Americans), etc.

c. A continuity tends to persist. (Examples: The house which is next door today probably will be there tomorrow. All cities in a given Time Zone this year will probably remain in that same Time Zone next year. Any person or group which is American now probably will be American ten years hence).

d. Because continuities tend to persist, they constitute a fundamental basis of forecastability.

e. The "most probable forecast" usually is as follows: "The future will be more like the present than otherwise." Actually, this is not a forecast but a projection (See Learning Module 4, Point 3). That is, such a "forecast" actually makes a simple extension of existing trends or circumstances without considering why things are as they are or why they might be different hereafter.

f. Nonetheless, accepting projections as forecast--which we can do, of course, if we choose--is one of the most common ways of making a forecast, even though it does not satisfy the "ideal forecast" definition given above (Point 1). In such cases, the forecast is based almost entirely on the principle of Continuity.

5. Discontinuities.

a. Discontinuity in a forecast topic refers to:

(1) Any significant shift (often sudden or unexpected) in perceived relations between or among separate aspects of a topic. (Example: Betrayal by "friend").

(2) Any significant shift (often sudden or unexpected) in perceived relations between a topic and other topics. (Example: A switch by a Republican Senator (Topic A) to the Democratic Party (Topic B). Any "surprise" is a discontinuity.

b. Because discontinuities tend to be sudden, significant, and often unexpected changes in continuities, discontinuities impose limits on forecasts since forecasts tend to be based on projected continuities. /LM8/

c. A continuity forecast does not require a detailed understanding of a topic. It can state merely: "However things are now, that's how they will be later. On the other hand, a discontinuity forecast cannot be made so simply. In a discontinuity forecast, the forecaster must:

(1) Identify existing significant continuities.
(2) Decide how these could change.
(3) Decide which continuity changes would be significant.
(4) Decide under what circumstances discontinuity might occur.
(5) Estimate probabilities for occurrence of each possible significant discontinuity.

6. Scheduling and Timing.

a. Scheduling: Making an estimate either of when or of the circumstances in which a possible future development or event might occur.

b. Every valid forecast must include a schedule.

c. Forecast schedules require the following estimates:

(1) What is the present rate of change for each significant factor?
(2) Which change rates will remain continuous and which will be disrupted by discontinuities?
(3) When may discontinuities be expected?
(4) How rapidly will other change rates respond to discontinuities in any given change rate?
(5) How much confidence can be placed in estimates (1) through (4) preceding?

7. Manageability.

a. Manageability: The capacity of the forecaster (or of someone else, in the judgment of the forecaster) to actualize particular alternative futures from among all possible alternative futures. (Note: Futures Manageability is discussed in detail in Learning Module 12).

/LM7/

b. The forecastability of any topic decreases as its estimated future manageability increases. Why? If a topic is thought to be totally unmanageable, the forecaster need only estimate what could happen. (Example: What are the chances of rain tomorrow?) If a topic is seen as manageable, however, the forecaster must estimate both what could happen and what someone will choose to make happen. (Example: If rainfall were perfectly controllable through human intervention, the forecaster would be required to estimate both the chances of "unassisted" rainfall and the social/political/economic battles between those who would prefer rain tomorrow and those who would not).

c. Estimating the future manageability of any forecast topic often is very difficult. It requires estimates or knowledge of:

(1) How future control might be achieved.
(2) Outcomes of future struggles about ways and means of using control when it becomes available.

d. Because forecasting manageability is so difficult and uncertain, forecast estimates on this subject may vary greatly from:

(1) one forecaster to another
(2) one forecast topic to another
(3) one time period to another

wherever it is relevant, futures manageability imposes severe limits on the forecastability of a topic.

8. Conclusion.

a. No development or event is certain until it has actually occurred. For that reason, every forecast is an estimate and as such is subject to error. That is, no topic is ever completely forecastable.

b. The forecastability of a topic may be limited by any or all of the following types of forecast errors:

(1) Topical errors. (Example: A forecast devoted to "work" which did not provide an explicit definition of the term would be subject to serious topical errors). /LM8/

(2) Content errors. (Example: A forecast of future employment based on incorrect or incomplete figures about present employment would be subject to serious content errors).

(3) Scheduling errors. (Example: A forecast of future economic growth which seriously misestimated growth rates would be subject to serious scheduling errors in estimating when a particular GNP might be achieved).

(4) Scope/scale errors. (Example: A 1940 forecast of U.S. television which assumed that few people would ever buy TV sets would have made a serious scope/scale error).

(5) Manageability errors. (Example: A medical forecast which assumes that extensive transplant of artifical organs will never be possible probably would be subject to serious manageability errors).

c. The gravity of forecastability limits imposed by such errors depends on the nature of the forecast topic, what investments or risks are to be based on the forecast, and how much other information is available from other forecasts.

d. Perhaps the most dangerous limit on forecastability is the limit imposed by credible errors. (Example: A distinguished American scientist flatly denied that powered manned flight would ever be possible--only a few months before the Wright Brothers flew. At that time, most people found his forecast credible while few either knew of the Wright Brothers work--or would have held it credible had they known of it).

Learning Module 9: CONFIDENCE IN FORECASTS /LM9/

Objectives:

1. To identify the six factors which must be considered in estimating how much confidence should be placed in any forecast.
2. To discuss each of the six factors.

Presentation Time:

About one hour, plus time for questions and discussions.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. As discussed in Learning Module 4 (Point 5), a forecast is a type of futures report which:

   a. Treats a clearly specified topic.
   b. Identifies and describes the most significant possible future developments or events pertinent to the topic.
   c. Arranges these possible future developments or events into a set of two or more alternative futures.
   d. Specifies the significant circumstances in which an alternative future may be realized as the actual future.
   e. Makes estimates about the chances or probabilities that each alternative future may be realized as the actual future.

2. No possible future development or event is certain until it has actually occurred. Thus one can never have complete confidence in any forecast. The extent of confidence placed in any forecast is always a relative matter, in which six factors must be considered:

   a. Nature of forecast topic.
   b. Adequacy of forecast topic description.
   c. Forecasting time horizon used.
   d. Forecaster's qualifications.
   e. Forecasting methods used.
   f. Use made of relevant information.

3. Nature of forecast topic.

a. Every forecast topic includes certain elements most critical to the forecast. (Example: In population forecasts, the most critical elements are Birth Rates, Death Rates, and Migration Rates). /LM9/

b. In some cases, critical elements tend to exhibit continuity or persistence. (Example: Death Rates tend to change slowly if at all). In other cases, critical elements tend to exhibit discontinuity or rapid shifts. (Example: Changes in ladies fashions).

c. When all or most forecast topic critical elements are continuous, forecast errors are minimized and greater confidence can be placed in the forecast. When all or most forecast topic critical elements are discontinuous, forecast errors are maximized and less confidence can be placed in the forecast.

4. Adequacy of forecast topic description.

a. The scope (what is considered) of any forecast topic may range from very narrow and specific to very broad and general.

b. When the forecast topic description is general and non-specific:

(1) Confidence in the forecast may increase. (Example: "The world will endure.").

(2) But the significance or utility of the forecast may decrease. (Example: "The world will endure but will my world?").

c. When the forecast topic description is narrow and specific:

(1) Significance or utility of the forecast may increase. (Example: "What I expect to get done next week.").

(2) But confidence in the forecast may decrease. (Example: "Who knows exactly what will happen next week?").

d. The forecaster or forecast user must decide for himself what is the best trade-off between confidence and significance in a particular forecast.

/LM9/

5. Forecasting time horizon used.

   a. A forecast treats a number of different possible developments or events which may occur in futures.

   b. Each separate possible development or event has at least two outcomes (It will occur or it will not occur).

   c. Generally speaking, the longer the time period considered, the larger is the number of possible developments, events, and outcomes which must be considered.

   d. The larger is the number of possible developments, events, and outcomes which must be considered, the more numerous are the chances to make errors in forecasting.

   e. Therefore--generally speaking--the further into the future our forecast extends, the more subject to error is the forecast.

   f. Therefore, the further into the future our forecast extends, the less confidence we can place in the forecast.

6. Forecaster's qualifications.

   From the viewpoint of the forecast reader or viewer, the following questions should be raised in deciding how much confidence to place in the forecast:

   a. How much does the forecaster know about the forecast topic?

   b. How experienced is this forecaster in selecting and applying appropriate forecasting methods to this topic?

   c. How knowledgable is the forecaster about pertinent sources of information, and how fully has he consulted these sources?

   d. Are the forecaster's purposes in making this forecast consistent--or at least not in conflict--with my interests in this forecast topic?

7. Forecasting methods used.

Forecasting methods vary significantly (see /LM9/ Learning Module 5). In deciding how much confidence to place in a particular forecast, we must judge how appropriate the methods used are to the forecast topic. This judgment can be made with respect to such factors as:

a. What quantity and how much variety in topical elements can be handled by this method?

b. How fully can this method draw on relevant information?

c. How clearly can this method reveal the nature and extent of uncertainties in the forecast?

d. How well can this method deal with "near-in" time horizons versus "far-out" time horizons?

e. How well does this method handle quantitative versus qualitative factors?

8. Use made of relevant information.

For any given forecast topic, both the forecaster and the forecast user will have definite (but often different) knowledge and opinions about what sources of information pertinent to the topic should be consulted. In estimating how much confidence should be placed in a given forecast, we must judge such factors as:

a. What information is relevant to the topic?

b. How much relevant information exists?

c. How much relevant information was known to the forecaster?

d. Of the relevant information known to the forecaster, how much did he consult?

e. Of the relevant information consulted by the forecaster, how much did he use?

f. Of the relevant information used by the forecaster, how and how satisfactorily did he use it?

9. Conclusion.

Six factors related to the amount of confidence placed in a forecast have been identified and discussed. "Confidence" in a forecast can be resolved into two components: reliability and validity.

a. Reliability: How fully does a forecast's findings and conclusions correspond with (and is supported by) the forecaster's information, assumptions, estimates, and purposes. Confidence in reliability means confidence that what was asserted to be done was done.

b. Validity: How fully does a forecast's findings and conclusions take into account the information, assumptions, estimates, and purposes which the forecast user believes are essential.

c. A forecast's reliability may be judged in terms of its own assertions. A forecast's validity can only be judged with respect to what the forecast user believes is valid. A forecast may be judged reliable but invalid.

Learning Module 10: ATTITUDES TOWARDS FUTURES

Objectives:

1. To identify five basic attitudes towards futures.
2. To suggest that a forecaster's basic attitude may be reflected in his forecasts.
3. To discuss means for determining the forecaster's basic attitude by examining his forecasts.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In forecasting as in all else, our attitudes about alternative futures are inevitably determined by our past experiences, present circumstances, and our feelings and judgments about our experiences and circumstances.

2. Our judgment as to when the future "begins" may vary a great deal--from age group to age group, sub-culture to sub-culture, and situation to situation. (Examples: Small children often feel as if "Christmas will never come" while their parents often feel as if "the years just fly by." Adolescents and very poor people (for quite different reasons) may believe that there is no future, only today, while preachers and philosophers may agree that "eternity is all that matters." Overall, there is widespread disagreement as to what is the "short run" and the "long run" and as to which is more important). /LM10/

3. However it is determined, there are certain rather well-defined emotional postures or attitudes about the future.

   a. Traditionalism ("The future will be much like the present.").
   b. Optimism ("The future will be better than the the present.").
   c. Pessimism ("The future will be worse than the present.").
   d. Pragmatism ("No one can know what the future will be like.").
   e. Fatalism ("The future is predetermined, and no one can change it.").

4. Traditionalism. This is one of the most ancient and formerly most widespread attitudes toward the future. It arose in an historic past when human change in any dimension was experienced very slowly. This attitude is reflected in such sayings as: "You can't change human nature"; "you can't fight city hall"; "as sure as death and taxes"; etc.

5. Optimism. In Western civilization, optimism about the future (on Earth, at least) first arose during the Renaissance, blossomed during the Enlightenment, and reached fullest flower in the American Idea of Progress at the opening of this Century.

6. Pessimism. Pessimism about Earthly futures is inherent in the Christian world, at least from the days of its origins through the Dark and Medieval Ages to the Age of the Reformation. The same pessimistic theme is seen in many Eastern cultures where religion holds the view that the only thing superior to dying young is never to have been born at all.

7. Pragmatism. The term as used technically may not be apt. But this posture towards the future is that no one can foresee what may happen and so the future is not worthy of human consideration. The identification of the future with darkness and blackness--"The unknown future"--expresses this basic attitude.

8. Fatalism. Traditional Muslim's believe in "the will of Allah". There is a well-known phrase: "Whatever will be, will be." There is another phrase: "What difference will it make in 100 years?" In various ways, these and other expressions hold to the view that the future is monolithically, eternally predetermined, and that humanity has no capacity whatsoever to influence the actual future in the slightest degree, so that to speculate about the future is a waste of time.

9. Most forecasters--and so, most forecasts--are based on some combination of these basic postures or attitudes towards futures. More often than not, however, the forecaster is honestly unaware of his fundamental attitudes about the future. And so it is important for the forecast reader or user to decide for himself what are the forecaster's basic attitudes about futures, based on the forecast itself.

10. The importance of a forecaster's basic attitudes about the future varies widely in accord with such factors as those suggested by the following questions:

    a. How broadly and deeply aware is the forecaster of his basic attitudes about possible futures?

    b. Is the forecaster engaged in a non-prescriptive or in a prescriptive forecast? (For a discussion of this difference, consult Learning Module 4. Otherwise, think of a "non-prescriptive" forecast as objective and a "prescriptive" forecast as subjective).

    c. How important is the forecaster's basic attitudes about the future in making this particular forecast?

11. A forecast reader or user can seek to determine the forecaster's basic postures and attitudes about the future by considering such questions as:

a. Which information, assumptions, estimates, and conclusions does the forecaster judge are most important? /LM10&11/

b. Which estimates and conclusions in the forecast are least supported by the information and assumptions offered?

c. What significant information, assumptions, estimates, and conclusions--if any--have been omitted or under-emphasized?

Learning Module 11: CAUSALITY AND FUTURES

Objectives:

1. To present and discuss the proposition that every forecast is based significantly on the forecaster's assumptions (often implicit or sub-conscious) about cause-effect relations.
2. To identify and discuss five primary cause-effect concepts which are involved in any forecast.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Every forecast makes some critical (if often unstated) assumptions about:

   a. Which are the significant aspects of the forecast topic.

   b. The significant interrelations among significant aspects.

   c. How past developments and events have shaped the present.

   d. How past and present developments and events will or may contribute to future developments and events.

   e. How future developments and events may affect future estimates about the meaning of past and present developments and events.

2. Critical assumptions such as those listed in Point 1 amount to a "theory" or a "model" of causality. That is, the forecaster's assumptions constitute a series of propositions about "What causes what, and how" as well as a series of propositions about "which causes and which effects are important."

3. Some fundamental propositions about causality which are often of critical importance in a forecast are:

   a. What (or which) possible future developments and events can be foreseen, and which cannot?

   b. Of those possible future developments and events which can be foreseen, which actually are foreseen and which are not?

   c. Shall the forecaster's judgment emphasize retrospection (what has happened in the past) or prospection (what may happen in the future)?

   d. In what ways and to what extent shall future developments and events be thought of as manageable? (See LM 12 for discussion of futures manageability).

   e. Which relevant values and priorities are now most important and which will be important in futures?

4. Forecastability versus non-forecastability. Forecastability is discussed in detail in Learning Module 8. Briefly, forecastability may be estimated for a given forecast topic in the following terms:

   a. Nature and extent of continuities. A "continuity" is any significant feature or relation within the forecast topic which can be expected to persist unchanged--or at least to change very slowly--in future time periods.

   b. Nature and extent of discontinuities. A "discontinuity" is any significant feature or relation within the forecast topic which is seen as subject to rapid significant shifts--often sudden or unexpected.

   c. Scheduling and timing. To the extent that a forecast topic involves significant prospects for discontinuities, the forecaster's ability to forecast the scheduling and timing of possible future developments and events is seriously curtailed.

d. Manageability. This limit on forecastability is discussed below and in Learning Module 12. Briefly, to the extent that a topic involves manageable future developments and events the more difficult it is to prepare forecasts for that topic, since human will and intervention must be given careful consideration. /LM11/

5. Nature and extent of actual foresight.

a. As "hindsight" regularly reveals, we seldom foresee all that--in hindsight--we could have foreseen.

b. In a society, individual forecasters collectively foresee much more than society as a whole accepts as credible or important.

c. Any possible future development or event which is foreseen as credible or important can be:

(1) Examined
(2) Debated
(3) Resolved "in principle"
(4) Planned for
(5) To some extent, "managed"

d. Any possible future development or event which is not foreseen as credible or important can be dealt with only on a limited basis, if at all.

e. The forecaster's assumptions about which possible future developments or events will be dealt with must critically affect the content and conclusions of his forecast.

6. Retrospective versus prospective emphasis.

a. Some forecasters regard humanity as being thrust into the future by the past. For them, history and experience are the best clues in speculating about possible futures. They are retrospective forecasters.

b. Some forecasters regard humanity as being pulled toward the future out of the past. For them, human needs and desires are the best clues in speculating about possible futures. They are prospective forecasters.

c. Most forecasters are partly retrospective and partly prospective. For them, what may happen in the future will be determined both by what has happened and by what we want to happen.

7. Assumptions about manageability of future. This topic is discussed in detail in Learning Module 12. Briefly:

a. Generally speaking, all possible alternative futures for a given topic are implied by the question: What can happen?

b. A forecast tries to narrow down what can happen. The forecast asks: Out of all that can happen, what may happen or what most probably will happen?

c. Some things which may happen are regarded as possibilities involving human choice or the exercise of human will. These choices may be thought of as two basic types:

(1) Choosing whether a given development or event will or will not actually occur in future.

(2) Choosing which among many possible (but mutually exclusive or conflicting) developments or events will be caused to occur.

d. The forecaster's assumptions and estimates concerning Point (c) above critically affect the forecast's content and findings.

8. Assumptions about values and priorities. This topic is discussed in detail in LM 13. Briefly:

a. In selecting a forecast topic and in making a forecast, the forecaster--consciously or unconsciously--makes the following assumptions about human values and priorities:

(1) Which human needs and desires are most important to him.
(2) Which human needs and desires are most pertinent to his forecast topic.
(3) What present priorities are among human needs and desires with respect to his forecast topic.
(4) What future priorities may be among human needs and desires with respect to his forecast topic.

9. Some important causality assumptions in forecasting: A Summary.

a. In making any forecast, the forecaster must make a series of assumptions--unconsciously if not consciously--about "what causes what" and "which causes and which effects are important."

b. Some fundamental causality assumptions:

(1) What factors (causes) impose limits on the forecastability of the topic?
(2) What factors (causes) will determine which foresights will be accepted as credible and important, and which will not?
(3) How much emphasis should be placed on the past as the cause of the future, and how much emphasis should be placed on human needs and desires as the cause of the future?
(4) To what extent should future human ability to manage the future be considered a cause of the future?
(5) Which human needs and desires--in what priorities--are now pertinent to the forecast topic and which may be in future?

Learning Module 12: MANAGEABILITY OF FUTURES

Objectives:

1. To characterize the concept, "manageability of futures."
2. To discuss the scope and some basic limits of futures manageability.
3. To discuss three basic approaches to futures manageability.
4. To distinguish between authority and power in futures manageability.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. The full set of alternative futures for any forecast topic consists of every possible combination of developments and events which can occur with respect to that topic.

/LM12/

2. Out of the full set of alternative futures, a forecast seeks to identify those which are:

   a. most probable, and/or
   b. most significant, given the forecaster's particular interest.

3. Any single development, event, or alternative future (any one combination of developments and events) can be described or classified in many different ways. One way to describe or classify a development, event, or alternative future is in terms of its present or probable future susceptibility to human intervention and control. Some critical considerations in this regard are:

   a. Given our present capacities, could the occurrence or non-occurrence of this development, event, or alternative future be guaranteed or prevented?

   b. Given certain plausible or probable future capacities, could its occurrence or non-occurrence be guaranteed or prevented?

   c. Given our present capacities, could the scheduling or timing of this development, event, or alternative future be controlled?

   d. Given certain plausible or probable future capacities, could its scheduling or timing be controlled?

4. Manageable versus unmanageable futures.

   a. When the answers to the questions raised in Point 3 above are judged to be "No," such developments, events, or alternative futures are held to be unmanageable.

   b. When the answers to the questions in Point 3 above are judged to be "Yes," such developments, events, or alternative futures are held to be manageable.

   c. Mixed replies to the questions raised in Point 3 reflect limited or partial manageability. (Examples: (1) We may be able to guarantee the occurrence or non-occurrence of a development, event, or alternative future without being able to guarantee its timing or scheduling. (2) Given that a development, event or alternative future does occur, we may be able to guarantee its scheduling or timing but not its occurrence. (3) Because our capacities to control given

developments, events, or alternative futures may either be enlarged or diminished as time passes, we may be able to guarantee the occurrence, non-occurrence, scheduling and timing of a given development, event, or alternative future: (a) given present capacities, but not with future capacities; and (b) given future capacities, but not with present capacities. /LM12/

5. The capacity to determine--or even merely influence--the occurrence, non-occurrence, or scheduling and timing of any single development, event, or alternative future is one option. Our total array of options with respect to a given topic represents our (or somebody's) capacity to manage the future for that topic. Our capacity to manage the future may vary widely from:

   a. one time period to another
   b. one topic to another
   c. one manager (individual or organization) to another

6. Scope and limits of futures manageability. Some basic factors which help determine the nature and extent of futures manageability with respect to any given topic are:

   a. How narrowly or broadly a topic is defined. The more broadly a topic is defined, the more factors or variables which must be taken into account in trying to manage its futures.

   b. To what extent we desire to manage futures for a topic. Generally speaking, the more intensively we wish to manage futures for a topic, the greater is the effort which must be expended.

   c. Whether we wish to exert futures management over the "short run" or the "long run." Some things (nuclear particle reactions) must be managed in the short run if at all. Other things (religious beliefs) must be managed over the long run if at all. Other things (human development) may be manageable over both the short run and the long run.

7. Three basic approaches to futures management are:

   a. Active futures management
   b. Passive futures management
   c. Mixed-initiative futures management

8. Active futures management. This approach or strategy assumes that the topic to be managed can be directly controlled or manipulated to achieve the alternative future preferred. The approach is akin to "production management" where managers see themselves converting passive "raw materials" into the "end products" desired.

9. Passive futures management. This approach or strategy assumes that the most probable alternative futures for a topic--in the absence of the manager's control--can be forecast. The manager then seeks to accommodate himself and/or his environment to the forecast future in such a way that his future relation to the topic will be the preferred one. This approach is crudely suggested in the phrase, "If you can't lick 'em, join 'em."

10. Mixed-initiative management. This is perhaps the most flexible and most commonly used approach. It assumes that some aspects of the topic to be managed can be directly controlled, while for other aspects the managers must accommodate themselves or their environment to the topic. An example might be in forest management where some factors can be manipulated directly while others must be left to nature.

11. Authority versus Power in futures management.

    a. Futures management authority refers to the fact that certain persons or groups in any society are given or assume the right to determine what replies shall be given to the questions raised in Point 3 above.

    b. Futures management power refers to the fact that certain persons or groups in any society will have the capacity to determine what replies shall be given to the questions raised in Point 3 above.

    c. Futures management authority and futures management power may reside in different quarters. Political leaders may have the authority to approve space programs but space scientists and technologists have the power to translate such approval into actual programs.

Learning Module 13: VALUES AND FUTURES

Objectives:

1. To stress the fundamental importance of considering human values and value priorities in forecasting alternative futures.

2. To present an extremely simple values model. /LM13/
3. To critique the values model presented, so that the important problems and difficulties of considering value questions in forecasting alternative futures can be appreciated.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. In selecting a forecast topic and in making a forecast, the forecaster--consciously or unconsciously--makes some critical assumptions about human values and priorities:

   a. Which human needs and desires are most important to him?

   b. Which human needs and desires are most pertinent to his forecast topic?

   c. What are the present priorities among human needs and desires with respect to his forecast topic?

   d. What may be future priorities among human needs and desires with respect to his forecast topic?

2. Since there is no adequate model or theory of individual or social behavior, there is no adequate model or theory about human "values" and how they change.

3. An extremely simplified human values model is offered here to:

   a. Explore some relations between human values and forecasting.

   b. Emphasize the difficulties encountered in trying to account for human values when making forecasts.

4. The simplified values model offered has five main components:

a. The Valuator.
b. Needs.
c. Desires.
d. Values.
e. Value structures.

5. The Valuator. The person (or group or organization) assigning values pertinent to the forecast topic. Many different--and often conflicting--Valuators often must be considered in making one forecast.

6. Needs. The sum total of resources, processes and relations which the Valuator(s) believe(s) to be essential to his (its) survival or to maintaining present circumstances.

7. Desires. The sum total of resources, processes, and relations which the Valuator(s) believe(s) to be useful in improving his (its) present circumstances.

8. Value. A felt or expressed judgment by a Valuator(s) about the worth of any one resource, process, or relation relative to others in any given set of circumstances.

9. Value structure. A complete set of felt or expressed judgments about the worth of resources, processes, or relations--each relative to all others--in all actual or conceivable sets of circumstances.

10. Needs, Desires, and Values. This simplified Value Model assumes:

a. Valuator can and does make clear and consistent distinctions between his Needs and his Desires at any given time in any given set of circumstances.
b. Needs generate Primary Values
c. Desires generate Secondary Values.
d. Primary Values always have priority over Secondary Values whenever the two conflict.
e. Primary and Secondary Values vary:

(1) From one Valuator to another.
(2) From one Time-Interval to another.
(3) From one set of circumstances to another.

11. Content and organization of Value Structure. It is assumed that Primary Values determine the basic, most enduring content and organization of the Value Structure, while Secondary Values extend or modify the Value Structure as:

a. New Needs are identified (sometimes from among former desires).
b. New Desires are identified.
c. New resources, processes, and/or relations are encountered or conceived of.
d. New sets of circumstances are encountered or conceived of.

12. Weaknesses of the Value Model. Having presented the basic Value Model, we can enumerate some of its significant weaknesses:

a. Great conceptual and practical problems are encountered if we try to extend and refine the crude definitions given for the components of the Value Model.
b. It is unclear how to distinguish between Needs and Desires, and so between Primary and Secondary Values.
c. None of the assumptions listed in Point 10. above can be "proven" and some (for example, Point 10 a.) seem extremely doubtful.
d. The Value Structure description seems plausible but is difficult to demonstrate in practice.
e. Generally speaking, the Value Model is too vague and oversimplified for uses other than offering a first appreciation of Value issues and problems.

/LM13/

13. How Value Structures change. Some ideas about how Value Structures change are given in Point 11. above. Some further ideas are:

a. Identification of new Needs--whether via fresh experiences or via escalation of Desires into Needs--generates new Primary Values. These new Primary Values must then be integrated with existing Primary Values and existing Secondary Values.
b. Identification of New Desires via fresh experiences generates new Secondary Values which must be integrated into the Value Structure.
c. Experiencing or imagining new resources, processes, or relations may challenge the existing Value Structure. The result may be a reordering of the Value Structure, and/or the creation of new Primary or Secondary Values.
d. Encountering or imagining new sets of circumstances may challenge the existing Value Structure. The result again may be a reordering of the Value Structure, and/or the creation of new Primary or Secondary Values.

14. How Value Structures impact on Alternative Futures. To the extent that a simplistic Value Structure Model such as this one affords insights about human behavior, the Model implies such impacts as the following on Alternative Futures:

a. Each forecaster must and does make many critical assumptions and critical judgments about Alternative Futures which stem from:

(1) His own Value Structure.
(2) His perception of the existing Value Structure as it pertains to his forecast topic.
(3) His estimate of how future Value Structures may affect Alternative Futures pertinent to his topic.
(4) Personal or societal Value Structure conflicts--Primary-Primary conflicts, Primary-Secondary conflicts, and Secondary-Secondary conflicts--will create special possibilities for Discontinuities affecting the forecast topic. (Discontinuities are discussed in Learning Module 8.)

15. Accounting for Value Structures in forecasting Alternative Futures. We have seen how difficult it is to account for human values in trying to forecast Alternative Futures for any topic. Nonetheless, such factors as those suggested in Point 14. above are and must be considered in preparing forecasts about many topics--perhaps even most topics. Such factors are especially crucial when prescriptive forecasts are made--that is, forecasts in which the forecaster hopes to identify particular alternative futures which he then hopes to actualize or avoid through planning and/or action. (Non-prescriptive and prescriptive forecasts are discussed in Learning Modules 2 and 4.)

Learning Module 14: TRANSCENDENTAL CHANGE

Objectives:

1. To compare and contrast Transcendental Change with other forms of Change treated in Learning Module 6.
2. To identify and discuss five basic aspects of Transcendental Change.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. The following types of change rates were identified and discussed in Learning Module 6:

   a. No-Change
   b. Step Change.
   c. Linear Change.
   d. Exponential Change.
   e. Asymptotic Change.

2. Transcendental Change is a special form of Change. Transcendental Change may have a change rate like any of those listed in Point 1. above. Most often, perhaps, Transcendental Change is perceived as a rapid, sudden Step-Change. Some examples are:

a. The Birth of Christ.
b. Explosion of the first atomic bomb.
c. Perfection and mass use of polio vaccine.
d. First manned Moon landing.

3. Transcendental Change usually exhibits some or all of the following aspects:

a. Perceived as a sudden, dramatic change.
b. Perceived as having an irreversible impact.
c. Perceived as making significant alterations in the relative probabilities of many important alternative futures. (Some become impossible or much less probable, while others become much more probable or inevitable.)

4. Transcendental Change is a huge and little-understood topic. This Learning Module discusses five aspects of Transcendental Change:

a. Its origins.
b. Its forecastability.
c. Its magnitude of impact.
d. Its timing and scheduling.
e. Its significance.

5. Origins of Transcendental Change (T.C.)

a. T.C. origins often found in the cross-interaction of many other, lesser changes whose transcendental interactions were not widely or clearly foreseen. Some examples of such T.C. are:

(1) U.S. suburban sprawl.
(2) The "generation gap" (actually, an education gap).
(3) The modern Civil Rights movement.

b. T.C. often has its most significant impacts geographically or societally far removed from its point of origin. Some examples:

(1) Impact of low-priced automobiles on courtship patterns.
(2) Impact of mass production on social customs, mores.
(3) Impact of Vietnamese War on U.S. society and culture.

c. T.C. origins are often found in persons or circumstances where desperation or despair are deep-seated. Examples: /LM14/

(1) Suicide
(2) Homicide
(3) War
(4) Religious conversions

6. Forecastability of Transcendental Change.

a. The evangelical teachings of religious prophets, such as John the Baptist represent one of the most ancient forms of T.C. "forecasting." Note that such T.C. forecasts may be "self-fulfilling prophecies" if enough persons hear and heed them.

b. T.C. forecasts may sometimes be based on trend projections, when critical trends can be identified. Examples:

(1) Projection of maximum airspeed trends correctly implied the invention of fundamental new airplane designs when the speed of sound was reached.
(2) Population trend projections forecast T.C. problems as population totals and densities increase.
(3) Fundamental changes in social patterns can be forecast on the basis of a significant change in the average age of a population.

c. Many T.C. phenomena arise out of Discontinuities. A Discontinuity (see LM 8) is any significant shift in previously stable aspects or relations of a topic. The examples of T.C. given under Points 2 and 5 above are for the most part examples of T.C. based on discontinuities. As explained in Learning Module 8, the existence of significant discontinuities imposes severe limits on forecastability. T.C. phenomena on the whole, therefore, are often very difficult to forecast.

/LM14/

7. Transcendental Change's Magnitude of Impact. The magnitude of impact of a T.C. may be difficult to assess, but can be considered in such terms as:

a. How visible is the T.C. when it occurs? Initial visibility may range from low to high. Examples:

(1) Birth of Christ: Low visibility then.
(2) Explosion of atomic bomb: High visibility then.

b. How widely felt is the T.C. when it occurs? Initial impact may be narrow or broad. Examples:

(1) Introduction of numerical control machine tools: Narrow impact at first.
(2) Introduction of polio vaccine: Broad impact at first.

c. How rapidly is the T.C.'s impact diffused? T.C. diffusion rate may be slow or rapid. Examples:

(1) Use of antiseptics in medicine: Slow diffusion rate.
(2) Purchase of television sets in U.S.: Rapid diffusion rate.

d. How widely is the T.C.'s impact diffused? T.C.'s impact may be localized or globalized.

(1) Mayan temples: Localized impact.
(2) Automobile: Globalized impact.

e. In retrospect, how great an impact has the the T.C. had. While it may reasonably be argued that a change is not a Transcendental Change unless it makes a fundamental impact, it can also be reasonably argued that some T.C.'s make a greater impact than others. Examples:

(1) Introduction of male condums: Important impact.
(2) Introduction of female contraceptive pills: Fundamental impact.

8. Significance of Transcendental Change for Alternative Futures. A T.C. most often influences Alternative Futures by bringing to urgent, general, and often prolonged attention: /LM14&15/

a. New or newly perceived resources, processes, or relations.
b. New or newly perceived Needs.
c. New or newly perceived Desires.
d. New or newly perceived circumstances.
e. New or newly perceived capacity to manage futures.
f. Negation of any or all of the above--that is--the weakening or disappearance of what were previously perceived as available and/or valid resources, processes, relations, Needs, Desires, circumstances, or capacities for futures management.

Learning Module 15: STABILITY

Objectives:

To discuss the relation between:
1. Stability and Change.
2. Stability and Limits.
3. Stability and Stress.
4. Static or Dynamic Stability.

Presentation Time:

About one hour, plus time for questions and discussion.

Exercises, Assignments, References:

Consult Learning Guide

Topical Outline:

1. Stability must be discussed in relation to Change Rates. Change Rates are discussed in detail in Learning Module 6. Basically, Change Rate refers to the speed with which one set of circumstances is transformed into some other set of circumstances.

Example: If a dry lake has a total holding capacity of 500 million gallons and water begins to flow in at the rate of one gallon per hour, the Change Rate (transforming an empty lake into a full lake) is very slow, compared with the lake's capacity.

/LM15/

2. The simplest form of Stability is Static Stability. Static Stability refers to any situation in which there is a No-Change or Zero Change Rate--that is, in which no change is occurring (see Learning Module 6 for discussion).

Examples: There is Zero Change over time in the amount of water (all forms) available in the Earth and its atmosphere. There is Zero Change in the measured length of one foot from one time to another. That is to say, the amount of water on Earth and the measured length of a foot exhibit Static Stability.

3. Pure Static Stability is rare. In every object or situation, something--although not necessarily something significant--is usually changing, no matter how slightly. Stability is therefore usually a relative matter--something is more stable or less stable in comparison to something else, in comparison to its own stability in the past, etc.

4. Stability and Limits. In a Pure Static Stability situation, Zero Change (No-Change) is the rule. But since Stability is usually relative, Stability usually is more limited or less limited with respect to whatever Change comparison Standard is used. Thus Stability is usually assessed in terms of some limit(s) on Stability.

5. Stability Limits may be either or both of two types:

a. The Limit representing the total or maximum amount of change which can be accepted ever without disrupting or destroying forever an existing Pattern.
Example: A person who becomes progressively more ill as time passes can become only so ill; after that, he dies.

b. The Limit representing the total or maximum amount of change which can be accepted in any one Time-Interval without disrupting or destroying forever an existing Pattern.
Example: A person has some lifetime capacity to tolerate nuclear radiation. But a small fraction of that total may kill him if he receives too much at one time.

6. Whenever either the total or the per Time-Interval Stability Limits are exceeded for a given Pattern, one of two outcomes is possible:

a. The existing Pattern or situation may be completely disrupted or destroyed.
Example: A flower thrown into a fireplace is totally consumed.

b. The existing Pattern or situation may be temporarily or permanently transformed into some other Pattern or situation which is more stable than the old Pattern or situation, given the new circumstances.
Example: A Primary Nuclear Family in which the father is killed may survive by moving in with relatives or a reconstituted family may be formed if the widow remarries.

7. Stability and Stress. Change reduces Stability. As sustained or increasing change decreases Stability towards its Limits, the Pattern or situation is more and more apt to be totally disrupted or transformed into some more stable state. As the probability of disruption or transformation increases, we can say that stress increases. Stress in any Pattern or situation is induced whenever Stability can be maintained only with increasing difficulty.

Example: A lover experiences Stress when he must woo his beloved ever more and more ardently in order to sustain a previous level of reciprocal expression on the part of his beloved. Or--another example--Stress can be observed in a board as a heavy weight forces the board towards its breaking point.

8. Dynamic Stability. A Pattern or situation exhibits Dynamic Stability when it is able to avoid disruption over some range of Change within acceptable Limits. In some instances mostly Static Stability is exhibited, as in the cases of a stone or a board. In other instances a great deal of Dynamic Stability is exhibited, as in the cases of an airplane in flight or a symphony orchestra playing.

9. The simplest example of Dynamic Stability is one in which there are two stable states which can be occupied or exhibited alternatively.

Examples: A lightswitch is either on or off --both states are stable. The eyelids are either open or closed--both states are stable.

/LM15/

10. In many cases, however, a Pattern or situation which exhibits Dynamic Stability has many stable states. An airplane in flight can maintain its stability in many different ways in response to many different atmospheric conditions. A symphony orchestra playing can remain in time and in tune while playing an endless variety of music.

11. Both Static Stability and Dynamic Stability are important. Even a stone must expand and contract with temperature changes--that is, even a stone has some significant Dynamic Stability. Even an airplane or a symphony orchestra requires metals and structural elements which respond as little as possible to environment changes--that is, even an airplane or an orchestra exhibit some significant Static Stability.

12. On the whole, Static Stability is more important in simpler Patterns and situations, while Dynamic Stability is more important in more complex Patterns and situations. Increased complexity creates many more opportunities for dynamic interactions.

13. Understanding Stability is important in futures studies because Stability is so intimately linked with the processes of Change, which in turn is intimately linked with the concept of Alternative Futures.

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About the ADVENT® Program Directors

DAVID C. MILLER is a nationally recognized Futures Studies and Research practitioner who has been active in the field since 1965. He is a charter member of the World Future Society and a general editor of its publication, *The Futurist*. Mr. Miller's monograph, "Comprehensive Long-Range Forecasting for Management," appears in the *Proceedings* of the Inaugural Conference On Future Research, held in Oslo, Norway in 1967. He led a summer workshop, "Technology and Education in the 21st Century," at California State University, San Francisco in 1966. Since that time he has served as Adjunct Professor in the futures-focused graduate Cybernetic Systems Program, California State University, San Jose. Mr. Miller is a founding partner of Pacific House in Palo Alto, California, a professional policy and planning studies firm organized in 1971.

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Futures Studies And Research

Learning Resources Guide

By

David C. Miller * And Ronald L. Hunt,Ed.D. **

A selective Guide to
Futures Studies And Research

Books,Reports,Articles,Films,Popular Music,And Poetry

Includes
References And Suggested Exercises
Intended For Use With

Futures Studies And Research
Curriculum Guide

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The ADVENT® Program was organized in 1971 on the basis of a grant from the U.S. Office of Education. ADVENT® serves instructors and learners at the undergraduate, graduate, and adult levels who are seriously interested in exploring contemporary Futures Studies and Research. ADVENT® provides curriculum design support and develops learning materials and services in support of the field.

While the ADVENT® Program constantly evolves, in its present form the curriculum consists of 15 separate Learning Modules which may be used individually or in any sequence desired. Two Modules present the ADVENT® Standard Study Procedure, while the others deal with the following Core Concepts: The Time-Line, Appraising Futures Reports, Futures Studies Methods, Change, Alternative Futures, Forecastability, Confidence in Forecasts, Attitudes Toward Futures, Causality and Futures, Manageability of Futures, Values and Futures, Transcendental Change, and Stability.

All Core Concepts are presented in a concise outline format intended for elaboration by the instructor or learner as he explores topics in disciplines, academic fields, or problems and issues of interest to him.

ADVENT® publications now available include:

1. The ADVENT® *Futures Studies and Research Curriculum Guide*, 1973, paper, $5.
2. The ADVENT® *Futures Studies and Research Learning Resources Guide*, 1973, paper, $5.
3. A Graduate-Level Survey Of Futures Studies: A Curriculum Development Project. U.S.O.E. Final Report, Contract Number OEC-9-71-0023(057), August 31, 1972. (This Report may be purchased either from the U.S.O.E. ERIC or from DCM Associates at $15 postpaid, subject to availability.)

Inquiries about the ADVENT® Program, and information about *Guide* prices when purchased in textbook quantities are invited by the publisher:

DCM Associates
908 Fox Plaza
San Francisco, California 94102

PREFACE

The Quest For News Of Tomorrow

Many people regard "the future" as consisting simply of "all that is yet to be." From that perspective, it may seem that there is little or no opportunity to have news of tomorrow, excepting perhaps via tea leaves, crystal balls, or other forms of divination.

This ADVENT Learning Resources Guide is intended for those who find such a view of the future too simplistic too narrow, or otherwise unsatisfactory.

First we make a basic distinction between the actual future and possible alternative futures, using as a familiar example the next twenty-four hours in your own life.

The Actual Future

The actual future consists of that particular set of events occurrences, and behaviors which will make up the substantive detail of your day tomorrow. You will eat, sleep, talk, walk, work according to some particular schedule of seconds, minutes, and hours. Even now you have a general idea of what tomorrow probably will be like. Yet many details of tomorrow's actuality will remain undecided or unresolved until the immediate moment for decision or resolution is at hand. At this minute you do not know--nor do you need to--the exact moment you will awaken tomorrow morning. Even in more substantial matters, the morrow may hold surprise in store for you: a letter from a long-lost friend, a sudden death in the family, or an unforeseen financial crisis--tomorrow may in a million minor ways or in some major way not be as you now expect it will be.

In short, the actual future can never be known in complete detail until it has entered into and has become a part of the past. Next, we turn to the concept of possible alternative futures.

Possible Alternative Futures

Speculating once again about the next twenty-four hours in your life, what plausibly might happen tomorrow? Certainly what might happen encompasses many more possibilities than whatever actually will occur. You might get up at any one of many different particular times tomorrow morning, you might not even get to bed at all for some reason. In tomorrow's actuality, your choices will be much more narrowly restricted. If you actually go to bed tomorrow night, you cannot also stay up. If you arise at seven, you cannot also arise at eight, unless of course you go back to bed between times.

Moving away from trivial examples, tomorrow you might decide to quit your job or take a trip or marry the man--or not. Regarded from this moment, many such possibilities--as possibilities--may comfortably coexist, although even now some possibilities will be regarded by you as more probable than others. (It is more probable that you will arise tomorrow than that you will make a million dollars.) Various combinations of possibilities, then, taken together, compose a variety of alternative futures for tomorrow, of which the actual future is but one possible combination, a combination not to be revealed as actual until it has entered into the past. The actual future always is but one, narrow thread of ongoing reality spun off the infinitely broader loom of possible alternative futures.

If we believe that news of tomorrow cannot be had "because it hasn't happened yet," such constraints on foresight are to some extent of our own making, in failing to distinguish between actual and possible alternative futures. Coming events do cast their shadows before them, can we but be shrewd enough to discover today those dappled glades where tomorrow's sun casts its shadows. To cite an instructive example:

If a woman is impregnated today, then there is a real--even a calculable--possibility that she will bear a child about nine months hence. Until the actual moment of birth, the fact of birth remains only a possibility, albeit one whose probability daily increases. At any hour during her term unforeseen events or human intervention--abortion, miscarriage, the woman's death--may decree that this possible future event will never be realized in actuality. On the other hand, if the woman is never impregnated, it is certain that she will never bear a child (setting aside technologically induced immaculate conception, which is rapidly becoming feasible but which complicates the example unnecessarily for present purposes).

This familiar example illustrates clearly how we can use our knowledge and understanding about reality to conjecture sensibly and usefully about possible alternative futures. If certain future events actually occur, certain others cannot, while certain others still must occur. Often we can make realistic estimates about what may or may not happen, when, and why. In short, not only is it possible in principle to have news of tomorrow, it also is feasible in practice.

Of What Use Is News Of Tomorrow?

Conceding the point for the moment, an even more fundamental question pops up: Why bother? Of what real use or benefit to us is such information? Various voices will make various replies to the inquiry. Here is ours:

1. News of tomorrow can help us clarify our own hopes, fears, and expectations about the future. Uninformed or murky notions about our dreads and aspirations limit us to having strong feelings and prejudices whereas --if informed--our hopes and fears may be a powerful fuel in pursuit of our purposes.

2. News of tomorrow can help us identify our most pressing challenges and brightest opportunities, over the long run. As we gain a better sense of what we judge must be avoided, confronted, accepted, or striven for we can blend our many purposes more nearly into a single, consistent whole.

3. News of tomorrow can help us identify and evaluate our best options over the long run. Many of our finest opportunities are associated with long lead-time efforts, as when we invest the first two decades of our lives primarily in education for the remainder. Gaining a surer estimate of what can be most profitably done--and when--is surely gaining a solid advantage.

4. News of tomorrow can help us presently shape our purposes and priorities for the long run. This benefit follows naturally from those already mentioned. As we clarify our fears, hopes, and expectations; as we identify our most pressing long-range challenges and opportunities; and as we identify and evaluate our best options--so during this process we can learn to articulate, examine, and reshape our long-run purposes and goals in the light of our new perceptions.

5. News of tomorrow can be used as one guide in making committments dedicated to our purposes. It is simply never enough to <u>know</u> what we must do--we must also <u>do</u> it. In the end, we must bet our time, energy, and resources--that is, we must bet our lives--on only a few of the many courses we might like to pursue. Acting on our decisions is inevitable, no matter how much we may try to deceive ourselves otherwise. Every committment we make, every action we take is to some extent a gamble, because we can never be entirely sure that the outcome will be exactly as we anticipate. The actual future can never be known until it has been incorporated into the past. Anything we can do, therefore, which transforms at least some unknowable (and so unmanageable) uncertainty into some calculable (and so manageable) risk helps us improve the odds in betting our lives.

Conclusion

While many people sincerely believe that news of tomorrow cannot be had because they regard the future simply as "all that is yet to be," such a view is unnecessarily narrow and constraining. While it is true that the actual future cannot be known in complete detail until it has become part of the past, possible alternative futures can be rationally and systematically explored, often in considerable detail. Making such explorations is worthwhile because they can help us clarify our own hopes, fears, and expectations about the future; help us identify the most significant challenges and opportunities for the future; help us uncover and weigh our best options; help us shape our purposes and priorities for the long run; and help us minimize uncertainties in committing our resources to action in pursuit of our purposes.

If some such rationale--not necessarily this specific one--makes sense to you, this ADVENT® Learning Resources Guide may yield you a substantial profit in exchange for your time and attention. This Guide is--and is meant to be--only one point of entry into possible alternative futures. The best guide will be the one you develop for yourself as you go along. Nevertheless, one must begin someplace. Here is one place to begin. We sincerely hope that it will prove to be a pleasant and rewarding postern gate for you.

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A Learning Guide for Use with

Introduction To Futures Studies Concepts and Methods:

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Introduction

This LEARNING GUIDE is designed for use with the CURRICULUM GUIDE, to which the reader should refer.

The LEARNING GUIDE consists of the following Sections:

Section 1 through 15: Suggested exercises, assignments, and references for each of the 15 Learning Modules into which the CURRICULUM GUIDE is organized.

Section 16: A suggested list of basic reading references.

Section 17: A descriptive listing of useful 16 mm films.

Section 18: A referral title list of popular music recordings which may be useful.

Section 19: A referral title list of poems which may be useful.

As noted in Learning Module 2, Point 13, this curriculum design is based primarily on reasoned, logical analysis. This approach was considered essential in seeking to delineate Futures Studies concepts and methods in a comprehensible fashion. As further noted in LM 2, however, this approach either excludes or neglects other older, equally valid approaches to conjectures about alternative futures: intuition and reasoned synthesis as contrasted with reasoned analysis.

This LEARNING GUIDE seeks to strike a broader, more balanced approach to Futures Studies learning resources. Thus while Sections 1 through 15 adhere to the analytic approach, the general listing of films, popular music, and poetry presented in Sections 17, 18, and 19 provide entry to quite different perspectives about possible futures. Further, some of the basic

reading references presented in Section 16 also depart from the strictly rational, analytic approach.

As suggested in Learning Module 2, Points 15, 16, and 17, faculty and students are urged and encouraged to use the CURRICULUM GUIDE selectively--to pick and choose from it those concepts and methods best suited to the interests and learning styles of individuals or groups using the GUIDE. The materials listed in this LEARNING GUIDE should be treated in exactly the same spirit. Like the CURRICULUM GUIDE, this LEARNING GUIDE is regarded by the authors as a point of departure, on the basis of which each user should develop his own GUIDE.

Learning Guide Section 1: Accompanies Learning Module 1: THE STANDARD STUDY PROCEDURE, PART I

Suggested Exercises: (in class or after class, individually or in groups)

1. Name ten synonyms or related words for FORESIGHT. Do the same for INSIGHT. Compare the two lists, considering the similarities and the differences.

2. The Standard Study Procedure is based on the premise that detached, objective, systematic observation is possible and useful. IS IT? If so, what are its STRENGTHS and WEAKNESSES?

3. The Standard Study Procedure is based on the premise that you are interested in studying alternative futures for some particular topic. What is it? What is the nature of your interest in that topic?

Suggested Assignments:

1. Choose one or two narrow and "absurd" topics. Individually, make a quick pass at describing the topic(s) in terms of the PATTERN and its ENVIRONMENT. Spend no more than 5 or 10 minutes on each topic. Later, compare your results with others, and discuss the reasons for similarities and differences. Some possible topics might be:

   a. Bubble gum.
   b. Perspiration.
   c. Insults.
   d. Hairdos.
   e. Bricks.

2. If you are beginning your futures studies with this LM, take a Pre-test personality inventory test. Plan to take the Post-test after your first studies are completed, to see how (if at all) your orientation has changed. Many such tests are available. Noel McInnis (then at Kendall College) has used the Everett G. Shostrum personality orientation inventory for this purpose in some futures studies courses.

3. Prepare a written, 500-word statement explaining why you should learn and apply the Standard Study Procedure. Prepare a second 500-word statement explaining why you should not. Finally, write a 100-word statement explaining which view you find most convincing, and why.

Suggested References:

1. Donald N. Michael, The Unprepared Society: Planning for a Precarious Future. New York: Basic Books, 1968, 132 pages, $4.95.

2. Max Ways, " Don't We Know Enough To Make Better Public Policies?," Fortune Magazine, April 1971, pages 64+.

3. Edmund Carpenter, They Became What They Beheld. New York: Ballantine Books, 1970, unpaged, $3.95.

Suggested Films:

1. The Unexplained
2. The Physicists: Playing Dice With The Universe
3. Evolution In Progress

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 2: Accompanies Learning Module 2: THE STANDARD STUDY PROCEDURE, PART II

Suggested Exercises: (in, after class, individually or in groups)

1. Pick a topic or Pattern. Using information you already have, complete an ADVENT Form I, Observation Report Form.

2. Using the same topic and limiting yourself to the information used in complete Form I, complete an ADVENT Form II, Forecast Report Form.

3. Make an oral or written critique of the Standard Study Procedure. Be sure to include specific suggestions for improving it or for an alternative study approach.

Suggested Assignments:

1. Submit a written list of ten topics or Patterns whose alternative futures interest or concern you. For each, state the nature of your interest and what you might hope to gain by studying its alternative futures.

2. Interview 5 to 10 persons. Ask each to name one futures topic, Pattern, or issue which interests them. Ask each to provide his own interpretation of the term "alternative futures." Ask each how he has or would set about studying alternative futures pertinent to his interest.

3. Select a futures topic or Pattern for serious study. Begin assembling information. Submit a first outline plan for making your Observation and Forecast.

Suggested References:

1. Burnham P. Beckwith, The Next 500 Years. New York: University Exposition, 1967, 341 pages, $10.00.

2. Wendell Bell & James A. Mau, editors, The Sociology of the Future. New York: Russell Sage Foundation, 1971, 464 pages.

3. Arthur C. Clarke, Profiles of the Future. New York: Bantam, 1968, 235 pages, paper.

Suggested Films: (see Section 17 for complete details)

1. Stranger Than Science Fiction
2. The Futurists
3. Pollution Is A Matter of Choice

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 3: Accompanies Learning Module 3: THE TIME-LINE

Suggested Exercises: (in,after class, individually or in groups)

1. Take turns estimating the length of one minute. Record your several estimates, and note the variations.

2. Develop a list of sayings, maxims, and cliches about time.

3. Discuss the difference between "actual future" and "alternative future."

Suggested Assignments:

1. The Time-Line is only one arbitrary description of Time. Design a different model which explains and relates the following: "beginning," "end," "event," "past," "present," "future," "alternative future."

2. Submit a written 500-word comment on those aspects of Time which puzzle you most.

3. Conceive and be ready to present in class a simple experiment or demonstration which explains some aspect of Time.

Suggested References:

1. Henry Yaker and others, editors, The Future Of Time: Man's Temporal Environment. New York: Doubleday, 1971, $10.00.

2. Joost A.M. Meerloo, Along the Fourth Dimension: Man's Sense of Time and History, illustrated by Carl Smith. New York: John Day, 1970, $8.95.

3. Julius T. Fraser, editor, The Voices of Time. New York: George Braziller, Inc., 1966.

Suggested Films: (see Section 17 for complete details)

1. Reflections on Time
2. Time Is
3. Distinction of Past And Future

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 4: Accompanies Learning Module 4:
APPRAISING FUTURES REPORTS

Suggested Exercises: (in, after class, individually or in groups)

1. Make and submit ten predictions or prophecies.
2. Project the population of your community for the next decade.
3. Discuss weather forecasting. How accurate or inaccurate is it, and why?

Suggested Assignments:

1. Find two forecasts and submit written critiques for each, using the "ideal forecast" standards given in LM 4 (Point 5).

2. Make a forecast for any topic. Submit your forecast in a written statement, 1500 words maximum.

3. Identify ten people in your community who must either make forecasts or use forecasts. For each, give a 200 word description of why the forecast is made or used, and how it is used.

Suggested References:

1. Joseph P. Martino, editor, An Introduction To Technological Forecasting. World Future Society Book Series. New York: Gordon & Breach, June 1972, paper, $6.50.

2. Otis Dudley Duncan, "Social Forecasting--The State of the Art," The Public Interest, No. 17, Fall 1969, pages 88-118.

3. David Hackett, Historians' Fallacies. New York: Harper & Row, 1970, 338 pages, $10.00.

Suggested Films: (see Section 17 for complete details)

1. City (1939)
2. Man and the Second Industrial Revolution
3. Wired World

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 5: Accompanies Learning Module 5:
FUTURES STUDIES METHODS

Suggested Exercises: (in, after class, individually or in groups)

1. For each of the six basic methods mentioned, identify one or two situations in which the use of a given method would be inappropriate.

2. Select a sample topic. Discuss how alternative futures for that topic would be studied using each of the six methods.

3. Identify and discuss futures studies methods other than those mentioned in the LM.

Suggested Assignments:

1. Find and submit a written description of one futures report for each of the six basic methods--six reports in all.

2. Prepare and be ready to present and defend an analysis showing how a forecaster's assumptions and critical judgments affect the content of his forecasts.

3. Select any one topic whose alternative futures interests you. Select any one of the six basic futures studies methods. Prepare a brief written proposal explaining how you would apply that method to your topic.

Suggested References:

1. Herman Kahn and Anthony J. Wiener, The Year 2000: A Framework for Speculation on the Next Thirty-Three Years. New York: Macmillan, 1967, 431 pages, $9.95.

2. Daniel Bell, "Twelve Modes of Prediction," Daedalus (American Academy of Arts and Sciences), Summer, 1964, pages 845-80.

3. Clark C. Abt, Serious Games. New York: Viking books, 176 pages, $1.95.

Suggested Films: (see Section 17 for complete details)

1. Games Futurists Play
2. Weather: Who Votes For Rain?
3. America and Americans

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 6: Accompanies Learning Module 6: CHANGE

Suggested Exercises: (in, after class, individually or in groups)

1. Give one or two examples for each of the five Change Rates identified in the LM.

2. Give three examples of Quantitative Change and explain how it is or might be counted or measured. Give three examples of Qualitative Change and explain why it cannot be counted or measured.

3. Select some form of change which is now occurring. Identify and contrast the Change Rate Comparison Standards which might be applied in observing or measuring the change.

Suggested Assignments:

1. Submit a 500-1000 word commentary which compares the similarities and differences of physical change and behavioral change, individual or social.

2. Submit a 500 word statement which identifies and briefly describes what you believe to be the three most significant changes (any type) now occurring which represent an Asymptotic Change Rate.

3. For any futures topic you choose, submit a brief written description of the Change Rate Comparison Standards which might be appropriate, and suggest how observed significance of the change might vary depending on the Standard applied.

Suggested References:

1. Kenneth E. Boulding, The Meaning of the Twentieth Century:The Great Transition. New York: Harper & Row, 1965, 208 pages, paper, $1.45.

2. Selwyn Enzer, Dennis Little & Frederick D. Lazar, Some prospects for Social Change by 1985 and Their Impact on Time/Money Budgets. Middletown, Connecticut: Institute for the Future, March 1972, Report S-1-25.

3. Don Fabun, The Dynamics of Change. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1967, 300 pages.

Suggested Films: (see Section 17 for complete details)

1. Future Shock: Crisis in the 800th Lifetime
2. Stranger Than Science Fiction
3. Universities: Tearing Down The Ivy

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 7: Accompanies Learning Module 7: ALTERNATIVE FUTURES

Suggested Exercises: (in, after class, individually or in groups)

1. Suggest and execute some insignificant but absurd behavior or activity which you believe no one else could have foreseen. Explain why this "alternative" could not have been foreseen. (Example: stand on your head).

2. Individually, make a brief list of important events you foresee will occur in your community during the next 24 hours. Then compare your list with others for similarities and differences.

3. Try to identify five developments or events whose timing and details are absolutely predictable. Be prepared to explain and defend your selections.

Suggested Assignments:

1. Identify some event which has at least two different and mutually exclusive possible outcomes (a ball game, an election, etc.). Submit a written 500 word commentary describing the major consequences which would follow from each outcome, in contrast to the other(s).

2. Identify by one or a few words a series of ten possible and different alternative futures for your own life for the next decade. Then try to identify the critical developments or events which might determine the relative probabilities for each alternative you have named.

3. Selecting any topic, interview five people and be prepared to report your findings in their replies to this question: With respect to (your topic), what do you believe could happen during the next twelve months, and what do you believe will happen?

Suggested References:

1. Contemporary Societal Problems . Menlo Park, California: Educational Policy Research Center, Stanford Research Institute, June 1971, 46 pages.

2. Raul De Brigard and Olaf Helmer, Some Potential Societal Developments, 1970-2000. Middletown, Connecticut: Institute for the Future, April 1970, Report R-7, 134 pages.

3. Kenneth E. F. Watt, "Man's Rush Toward Deadly Dullness--Diversity Is More Than The Spice of Life," Natural History, February 1972, 7 pages.

Suggested Films: (see Section 17 for complete details)

1. Multiple Man
2. Genetics: Man The Creator
3. Multiply and Subdue the Earth

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 8: Accompanies Learning Module 8: FORECASTABILITY

Suggested Exercises: (in,after class, individually or in groups)

1. Identify and discuss three topics which you believe are most forecastable and three which are least forecastable.

2. Select any forecast topic. For that topic,identify and discuss its significant continuities and its significant discontinuities.

3. Some events--such as elections--can be forecast according to a fixed time or schedule. Other events--such as when U.S. population may reach 300 million--can be forecast only in terms of assumptions about prior conditions and rates of change. Identify and briefly discuss one event of each kind.

Suggested Assignments:

1. Select any forecast topic, and submit a 500-1000 word written discussion about its forecastability.

2. Select any forecast topic. Submit a 500-1000 word written commentary about the futures manageability of that topic.

3. Consulting the literature, find three forecasts which events have shown to be in significant error. Submit a 500-1000 word written commentary identifying these errors and relating the sources of error to forecastability.

Suggested References:

1. Nigel Calder, editor, The World in 1984. Baltimore: Penguin Books, 1965, 2 volumes, 215 pages & 205 pages, paper.

2. Arthur C. Clarke, Profiles of the Future. New York: Bantam Books, Inc., 1968, 235 pages, paper, $.75.

3. Jay W. Forrester, "The Counterintuitive Behavior of Social Systems," Technology Review, January 1970.

Suggested Films: (see Section 17 for complete details)

1. The Unexplained
2. The Physicists: Playing Dice With The Universe
3. Stranger Than Science Fiction

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 9: Accompanies Learning Module 9: CONFIDENCE IN FORECASTS

Suggested Exercises: (in, after class, individually or in groups)

1. Identify three forecasters (individuals or organizations) in whose forecasts on particular topics (name the topics) you would have the greatest confidence. Similarly, those in whose you would have the least confidence. Discuss.

2. Identify three forecast topics whose nature makes it possible to use relatively long time-horizons. (Examples: Population growth, resource consumption).

Identify three topics whose nature requires the use of relatively short time-horizons. (Examples: clothing fashions, professional sport clubs competitive standings).

3. Select any three forecast topics. For each, indicate which forecasting method(s) could yield the forecast in which you would have the most confidence and which would give you the least confidence. Discuss.

Suggested Assignments:

1. Using any published forecast, submit a 500-1000 word confidence evaluation statement based on the six factors identified in the LM (Point 2).

2. Select any forecast topic, and for it prepare a topical definition and scope statement for discussion in class. Be prepared to critique similar statements written by others. If your statement is perfectly written, no one should have any questions to ask about it.

3. Identify a widely known futurist (e.g. Dennis Gabor, Herman Kahn, Olaf Helmer). On the basis of what you can learn about the forecaster, submit a 500-1000 word statement discussing those forecast topics for which this forecaster would have your greatest and least confidence. Explain.

Suggested References:

1. Editors of New York Times Economic Review (annual feature), "Search for Meaning Amidst Change," June 6, 1969.

2. Jay W. Forrester, World Dynamics. Cambridge, Massachusetts: Wright-Allen, 1971, 72 pages.

3. John McHale, "World Facts and Trends," Futures , September 1971, pages 216-301, and December 1971, pages 385-95.

Suggested Films: (see Section 17 for complete details)

1. Weather: Who Votes For Rain?
2. A View of America From the 23rd Century
3. Future and the Negro

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 10: Accompanies Learning Module 10:
ATTITUDES TOWARDS FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Decide which of the five basic attitudes presented in the LM best describes your overall posture towards futures. If none best describe you, provide your own category. In any case, explain your selection.

2. Using the five-category typology given, estimate what fraction or percent of people you know personally fall under each category. Compare your estimates with others.

3. Select a forecast topic. For that topic, name at least five ways in which the forecaster's attitudes might affect the content of his forecast.

Suggested Assignments:

1. Identify and submit 500-1000 word descriptions of one or more forecasts which represent each of the five basic attitudes mentioned in the LM.

2. Genetic inheritance, socio-economic status, early childhood experience, and current needs and desires are some factors which can have a significant impact on our attitudes towards futures. Which of these do you consider most important, and why? What other factors do you believe are important? Submit your answer in a 1000 word written statement.

3. Select a futures topic about which you are pessimistic. Discuss what sorts of future developments and events would be required to modify or eliminate your pessimism. Submit your discussion in a 1000 word written statement.

Suggested References:

1. F.M. Esfandiary, Optimism One: The Emerging Radicalism. New York: Norton, 1970, 249 pages, $5.95.

2. Gordon Rattray Taylor, The Doomsday Book: Can The World Survive? New York: World, 1970, $7.95.

3. Fred Polak, The Image of the Future. New York: Oceana, 2 volumes, 1961.

Suggested Films: (see Section 17 for complete details)

1. Technology: Catastrophe or Commitment?
2. "1985"
3. Multiply and Subdue the Earth

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 11: Accompanies Learning Module 11: CAUSALITY AND FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Identify three personal beliefs which you have modified significantly within the past two years. Cite the factors which caused you to change your beliefs. Then identify three other personal beliefs which you suspect you may modify during the next two years. Again, cite the factors which explain your selections. Discuss.

2. Using this form--"_____causes_____," list five cause-effect relations which are most important to you. Be prepared to explain and defend them.

3. Identify three significant recent or current developments or events for which you can see no discernible cause. Discuss them.

Suggested Assignments:

1. Select any forecast topic. For that topic, submit a 1000 word written discussion based on the five causality factors mentioned in the LM (Point 3).

2. Which is the more significant "cause" of your behavior--your experience in the past or your present goals for the future? Submit a 1000 word commentary which explains.

3. Develop and be prepared to present in class an experiment or demonstration which explains some aspect of cause-effect relations.

Suggested References:

1. ANNALS of the New York Academy of Sciences. Environment and Society in Transition. New York:

New York Academy of Sciences, 1971, 699 pages.

2. Eleanor Bernert Sheldon & Wilbert E. Moore, editors, Indicators of Social Change: Concepts and Measurements. New York: Russell Sage Foundation, 1968, 900+ pages.

3. Charles R. Dechert, editor, The Social Impact of Cybernetics. New York: Simon & Schuster, 1966, 206 pages, Clarion paperback.

Suggested Films: (see Section I7 for complete details)

1. Weird World of Robots
2. Evolution in Progress
3. Tragedy of the Commons

Popular Music and Poems:

Consult the general listings given in Sections 18 and 19.

Learning Guide Section 12: Accompanies Learning Module 12: MANAGEABILITY OF FUTURES

Suggested Exercises: (in, after class, individually or in groups)

1. Identify three activities which you believe you could but will not choose to engage in within the next 24 hours. For each, explain why you believe you could and why you believe you will not choose to do so.

2. The President of the United States "manages futures" to some extent. What are the basic means available to the President in seeking the alternative futures he prefers? What are the basic limits on his capacity to manage futures.

3. Assuming that you are at this moment participating in a futures studies class session, see if you can manage the immediate future by shortening or extending the scheduled class period.

Suggested Assignments:

1. Select some topic for which it appears the future has been managed extensively. (Examples: Placing man on the moon, developing the atomic bomb, commonplace use of contraceptives). Given your topic, discuss how the future was or is being "managed," whether it serves "good" or "bad" ends, whether in

your judgment the management was/is effective, and what limits have been encountered in seeking to manage the future. Submit your discussion in a 1000 word written statement.

2. The Whole Earth Catalog tells us: "Since we're gods, we'd better get good at it." Discuss this maxim as a futures management issue in a 1000 word written commentary.

3. Quite apart from futures studies or any forecast topic, submit a 500-1000 word statement explaining what it means to "manage" something.

Suggested References:

1. Dennis Gabor, Inventing the Future. New York: Alfred A. Knopf, 1964, 238 pages.

2. Peter F. Drucker, The Age of Discontinuity. New York: Harper & Row, 1969, 402 pages, $7.95.

3. Amitai Etzioni, The Active Society. New York: The Free Press, 1968.

Suggested Films: (see Section 17 for complete details)

1. Tamer of Wild Horses
2. The Ultimate Machine
3. Multiply and Subdue the Earth

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

Learning Guide Section 13: Accompanies Learning Module 13: VALUES AND FUTURES

Suggested Exercises: (in,after class, individually or in groups)

1. Separately, prepare your own list of the three greatest problems confronting world society between now and 2000 A.D. and a second list of the three greatest opportunities. Compare your lists with others, and discuss.

2. Indicate the circumstances (if any) in which you would place your own life in jeopardy. Indicate the circumstances (if any) in which you would endanger or take the life of another person.

3. Discuss the meaning of the words "value" and "priority."

Suggested Assignments:

1. Prepare a listing of possible improvements in your community which have been debated or discussed within the past two years. Ask 15 people in the community to rank-order these possible improvements in one of three ways: "most needed," "least needed," "uncertain." Prepare a written 500-1000 word summary of your findings.

2. Design a simple game dealing with values and/or priorities which can be played by any small group.

3. Submit a written 500-1000 word account of any significant shift in your personal values or personal priorities during the past two years. If possible, indicate why you believe these changes occurred. Then identify possible changes in values or priorities which may occur in your life during the next two years.

Suggested References:

1. Kurt Baier & Nicholas Rescher, Values and the Future: The Impact of Technological Change on American Values. New York: Free Press, The Macmillan Co., 1971, 527 pages, $4.95 (original edition published in mid-60s).

2. Rene Dubos, So Human An Animal. New York: Scribner's, 1968.

3. Abraham H. Maslow, Religions, Values and Peak Experiences. New York: Viking Press, 1971.

Suggested Films: (see Section 17 for complete details)

1. "No. 00173"
2. Pollution Is A Matter Of Choice
3. But What Do We Do?

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

Learning Guide Section 14: Accompanies Learning Module 14:
TRANSCENDENTAL CHANGE

Suggested Exercises: (in,after class, individually or in groups)

1. Identify the most important transcendental changes which have occurred during your lifetime--either in the world as a whole or within your own life sphere. Discuss.

2. Granted that transcendental changes often cannot be foreseen, what developments or events constituting transcendental changes might you expect during the remainder of your life? Discuss.

3. Identify a particular transcendental change you wish would occur. Then discuss briefly what trend shifts, developments, or events would increase the probability of such a transcendental occurrence.

Suggested Assignments:

1. Transcendental changes often are scoffed at or criticized w'ey they occur. (Examples: non-believers upon Christ's birth, horse-buggy enthusiasts when the automobile appeared. Identify one possible transcendental change which may be occurring now, then discuss contemporary attitudes and reactions about it. Submit a written 1000 word commentary.

2. Spend two hours in absolute seclusion and quiet. Do not read, eat, sleep, listen to music, watch TV, etc.--simply meditate. Submit a 500-1000 word written account of your experience.

3. Consult a dictionary or other sources for definitions and discussions of the concept of "charisma." Then select a living "charismatic figure" and discuss the origins and the impacts of his "charisma."

Suggested References:

1. Richard Ofshe, The Sociology of the Possible. New York: PRENTICE-HALL, Inc., 1970, 391 pages, paper, $5.95.

2. Claudio Naranjo & Robert E. Ornstein, On The Psychology of Meditation. New York: Viking Press, 1971, 248 pages, $7.95.

3. Robert Silverberg, Son of Man. New York: Ballantine Books, Inc., paper.

Suggested Films: (see Section 17 for complete details)

1. Religion: Making The Scene
2. Real Revolution: Talks By Krisna-Murta
3. Mind of Man

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

Learning Guide Section 15: Accompanies Learning Module 15: STABILITY

Suggested Exercises: (in,after class, individually or in groups)

1. Discuss this situation: Suppose that natural or synthetic replacements existed for all major organs and structures in the human body, including the brain and central nervous system. If an individual were subjected to part-by-part replacement at what point (if any) would he lose his original identity?

2. Suppose that you were assigned the task of designing a monument to some human achievement. The monument should remain physically intact and its site known to society for at least 500 years. Suggest a design and a location, and explain your selections.

3. Identify ten things "which never change." Explain and defend your selection to others.

Suggested Assignments:

1. Select any forecast topic. For that topic, discuss its statically stable aspects, its dynamically stable aspects, and the relation between its static and dynamic stability. Submit a written 1000 word commentary.

2. "Synchronus orbital satellites" maintain a permanent position above some fixed point on Earth. Is this a case of static stability or dynamic stability? Submit a written 500 word explanation.

3. In your opinion, what is the single greatest threat to social stability in the United States today? What is "social stability"? Submit a written 1000 word commentary.

Suggested References:

1. Gerald Feinberg, The Prometheus Project: Mankind's Search For Long-Range Goals. New York: Doubleday, Anchor Books, 1969, 264 pages, $1.45.

2. Warren G. Bennis & Philip E. Slater, The Temporary Society. New York: Harper & Row, 1968.

3. Richard Falk, This Endangered Planet. New York: Random House, 1971, 495 pages, $8.95.

Suggested Films: (see Section 17 for complete details)

1. Year of the Communes
2. Smalltown, U.S.A.
3. The Industrial Worker

Popular Music and Poems:

Consult the general listings given in Sections 18 & 19.

LEARNING GUIDE SECTION 16:

A Selective Guide To Futures Studies Literature

Introduction

When in 1965 the reference guide Books in Print was consulted under the subject term "future," one single title was listed: The Future As History, by Robert Heilbroner (New York: Harper, 1959). Seven years later a similar check has not been made, because such a list would have been obsoleted long before it could be printed. Interest in futures studies and futures research has been spreading steadily and rapidly since the mid-Sixties, having reached a new take-off point with the worldwide popularity of Alvin Toffler's Future Shock.

The futures studies bibliographer in the mid-Sixties faced the difficult task of scrounging up even a modest list of appropriate entries. His counterpart today has an equally difficult task, but of a different sort: he faces an embarrassment of riches, and the question is where one draws the line.

What we have chosen to do in this bibliography is first to present a "mini-directory" of futures information resources, and then to offer a selective listing of items, using the following guidelines:

1. Cite substantial "landmark" items most often alluded to in the futures literature.

2. Cite major items--especially books--rather than shorter items as a rule. Thus the listing (subject to last-minute additions or deletions) includes 247 books, 51 documents or reports, and only 41 periodical or journal articles.

3. Cite generally-relevant items most, and narrowly specialized items least. One exception to this guideline has been made for technological forecasting, because this subject has to date constituted a major fraction of bona fide futures research, and because many of the issues dealt with by technological forecasters are relevant to futures research generally.

4. With a few exceptions,cite factual rather than fictional items. This guideline leaves a gaping hole in the case of science fiction, which we have tried to alleviate by citing other convenient and valuable sources of science fiction bibliographies.

Other Futures Studies and Futures Research Bibliographies

Among the more widely known and/or disseminated futures bibliographies are the following:

1. Future Studies Bibliography, by Billy Rojas, Program for the Study of the Future in Education, School of Education, University of Massachusetts, Amherst, Massachusetts. The first edition (January 1970) included some 1500 items organized under 16 categories. The second, revised edition appeared in 1971 and cites some 2000 items. The bibliography is mimeographed and may be purchased upon request to the address given above. Not annotated.

2. Essential Reading for the Future of Education, by Michael Marien, Educational Policy Research Center, Syracuse University Research Corporation, 1206 Harrison Street, Syracuse, New York 13210. The selected and critically annotated bibliography was published in February, 1971. It contains 200 items, organized under 20 categories, including three under "Methodology," and six under "General Trends and Descriptive Futures," which are not limited to education.

3. Alternative Futures for Learning: An Annotated Bibliography of Educational Trends, Forecasts, and Proposals, by Michael Marien, same address as 2 above. This listing contains 800 items--principally books and monographs--with about two-thirds annotated to some extent. March 1971, $5.00.

4. Not yet available but underway in 1972 for possible publication in 1973 is another critical bibliography by Michael Marien not limited to education at all. This will be the product of a multi-round Delphi Poll of practicing futurists which seeks to identify the seminal or essential items in the field. Dr. Marien's active and significant bibliographic projects do a great service to the entire futures field.

Dr. Dennis Livingston, political scientist and futurist now at Scripps Institute of Oceanography and a founder of the Science Fiction Research Association has identified a number of past and current bibliographic guides to science fiction. With expressions of gratitude, his references as prepared for a course at Case Western University in October, 1971 are reproduced as Items 5-9

below, plus the additional information given as Item 10:

5. "Everett F. Bleiler, The Checklist of Fantastic Literature. Shasta, 1948.

6. "Don Day, Index To The Science Fiction Magazine (1926-1950). Perri Press, 1952.

7. "W.R. Cole, A Checklist of Science Fiction Anthologies, With Supplement for Anthologies from 1964-1969.

8. "Frederick Siemon, Science Fiction Story Index: 1950-1968. American Library Association, 1971.

9. "Edwin S. Strauss, Index to the Science Fiction Magazines: 1951-1965. New England Science Fiction Association, 1966, with annual supplements.

10. "In addition, Fred Lerner (7 Amsterdam Avenue, Teaneck, New Jersey 07666) has prepared a Bibliography of Science Fiction Bibliographies and heads the Conference on the Bibliography of Science Fiction. Dale Mullen (Department of English, Indiana State University, Terre Haute, Indiana 47807) is preparing a definitive bibliography of Science Fiction in English 1496-1945. An annotated bibliography of the critical literature about Science Fiction will shortly be issued: Thomas D. Calreson, editor, Science Fiction Criticism: An Annotated Bibliography, Kent State University Press (Ohio)."

11. Bibliography on Automation and Technological Change and Studies of the Future, by Annette Harrison, RAND Corporation. October 1966, 24 pages, Report P-3365-1, RAND Corporation, 123 Main Street, Santa Monica, California.

12. Canadian Education and the Future: A Select Annotated Bibliography, 1967-1971, by Hugh A. Stevenson and William B. Hamilton, The University of Western Ontario, London, Canada, 1972, 260 items.

13. Among much else of great value, the book Futures Conditional by Robert Theobald (Indianapolis: Bobbs-Merrill, 1972, paper) includes an early bibliography prepared by Dr. Dennis Livingston (see Items 5-10 above).

Three other items which are not strictly speaking bibliographies, but which nonetheless offer good guides to past and current work in futures studies and futures research are given in items 14-16 below:

14. Future Studies Syllabus, by Billy Rojas and H. Wentworth Eldredge, revised edition, April 15, 1971, 86 pages, available from same address as Item 1 above.

15. "Education for Futurism in the United States: An On-Going Survey and Critical Analysis," Technological Forecasting and Social Change, Volume 2, 1970, by H. Wentworth Eldredge, pages 133-148. This article will be updated in 1972 by the author to present at the Third International Futures Research Conference in September 1972. Presumably, the revised paper will be available in 1973. The author is Professor of Sociology at Dartmouth College, Hanover, New Hampshire.

16. Typological Survey of Futures Research in the U.S., by Dr. John McHale, Center for Integrative Studies, State University of New York, Binghampton, New York. The first edition of this survey report (made under an NIMH grant) was issued in June 1970, 103 pages, mimeo. A second, revised edition is or shortly will be available.

Futurist Publications

(This list was published in Spring, 1971 by Dr. Dennis Livingston, as a part of his course syllabus for "Alternative World Futures," a course he taught at Case Western Reserve University).

1. 2000 Amenagement du Territoire Avenir, 59, Ave. Denfert-Rochereau, 75-Paris 14e, France.

2. Analysen Und Prognosen: Uber die Welt von Morgen ZBZ Mittellung, Zentrum Berlin fur Zukunftsforschung (ZBZ), Hohenzollerndamn 170, D-1000, Berlin 31, West Germany.

3. Analyse et Prevision, SEDEIS, 205 Boulevard St. Germain, Paris 7e, France.

4. Bulletin of Social Forecasting, Istituto Richerche Applicate Documentazione e Studi (IRADES), Via Paisiello 6, 00198 Rome, Italy.

5. Documentation Bulletin On Future Research 2000, Wolters-Noordhoff Publishing, Box 58, Groningen, The Netherlands.

6. Futures: The Journal of Forecasting and Planning, Iliffe Publishers, 32 High St.,Guildford, England.

7. Future Trends, Gesellschaft fur Zukunftsforschung, Karl-Muck-Platz 1, 2 Hamburg 36, West Germany.

8. Futuribili, Istituto per le Richerche di Economia Applicata (IREA), Via Venti Settembre 1, 00187 Rome, Italy.

9. Futuriblirne, Society for Research on Futures, Skovfaldet 2S, DK-8200 AARHUS N., Denmark.

10. Futurum, Carl Hanser Verlag, Munich, West Germany.

11. The Futurist: A Journal of Forecasts, Trends and Ideas About the Future. World Future Society: An Association for the Study of Alternative Futures, Box 19285, 20th Street Station, Washington, D. C. 20036.

12. WFS Bulletin, World Future Society, same address as 11 above.

13. IFRC Newsletter, International Future Research Conference (Secretariat), Lars Ingelstam, Institutionen for Matematik, Kungl, Tekniska Hogskolan, Stockholm 70, Sweden.

14. Technological Forecasting and Social Change, American Elsevier Publishing Company, 52 Vanderbilt Avenue, New York, New York 10017.

Futurist Organizations

Most of the publications cited in the preceding section are issued by futurist organizations. Many other futures studies and futures research organizations exist which do not publish journals or periodicals. Perhaps the most complete and current guide or directory of such organizations may be found in the following items:

1. Typological Survey of Futures Research in the U.S., by John McHale (See Item 16 in the preceding section titled, "Other Futures and Futures Research Bibliographies").

2. Long-Term Planning And Forecasting In Europe: 1968-1970, Division for Long-Term Planning and Policy, Directorate of Political Affairs, Council of Europe, Brussels, Belgium.

3. Technological Forecasting In Perspective, by Erich Jantsch, Organization for Economic Cooperation and Development (OECD), Paris, France.

4. The Delphi Exploration: A Computer-Based System for Obtaining Subjective Judgments on Alternative Futures, by Stuart Umpleby, Institute for Communications Research, University of Illinois, Urbana, Illinois, 1969.

In addition, some especially active futures research and consulting organizations include:

5. Association Internationale Futuribles, 52 Rue des Saints-Peres, Paris 7e, France (provides an open house and research services for visiting scholars).

6. Commission On The Year 2000, American Academy of Arts and Sciences, Boston, Massachusetts.

7. The Futures Group (Theodore Gordon), 124 Hebron Avenue, Glastonbury, Connecticut.

8. Hudson Institute, Quaker Ridge Road, Croton-on-Hudson, New York 10502.

9. Institute For The Future, Riverview Center, Middletown, Connecticut, 06457 (also offices in Menlo Park, California).

10. Mankind 2000 International, %Istituto Richerche Applicate Documentazione e Studi (IRADES), Via Paisiello 6, 00198, Rome, Italy.

11. Pacific House, 360 Bryant Street, Palo Alto, California 94301.

12. Program for the Study of the Future in Education, School of Education, University of Massachusetts, Amerherst, Massachusetts 01002.

13. Project on Canadian Education and the Future, School of Education, University of Western Ontario, London, Canada.

14. San Jose State College (now California State University, San Jose), Cybernetic Systems Program, BT 257, 125 South Seventh Street, San Jose, California 95114. (Note: The report of which this Bibliography is a portion was prepared by this Program under a grant from the U.S. Office of Education, Regional Research Program, Region IX, Dr. Walter Hirsch, Director. The Cybernetic Systems Program is directed by Professor Norman Gunderson).

15. Science Fiction Research Association, 7 Amsterdam Avenue, Teaneck, New Jersey 07666.

16. Stanford Research Institute, Educational Policy Research Center, 333 Ravenswood, Menlo Park, California.

17. Syracuse University Research Corporation, Educational Policy Research Center, 1206 Harrison Street, Syracuse, New York 13210.

A Selective Guide to Futures Studies And Futures Research Books

1. Clark C. Abt, Serious Games. New York, Viking Press, 176 pages, $1.95.

2. _____, Prospects for America: The Rockefeller Panel Reports. New York: Doubleday, 1961, 486 pages, $1.45, paper.

3. Clopper Almon, The American Economy to 1975: An Interindustry Forecast. New York: Harper and Row,1966.

4. Robert U. Ayres, Technological Forecasting and Long-Range Planning. New York: McGraw-Hill, 1969, 237 pages, $12.50.

5. Fritz Baade, The Race to the Year 2000. New York: Doubleday, 1962.

6. 'Ben H. Bagdikian, The Information Machines: Their Impact on Men and the Media. New York: Harper & Row, 1971, 359 pages, $8.95.

7. Ian G. Barbour, Science and Secularity: The Ethics of Technology. New York: Harper & Row, 1970, 152 pages, $4.95.

8. Raymond Bauer, editor, Social Indicators. Cambridge: M.I.T. Press, 1966.

9. Gregory Baum, The Future of Belief; Debate. New York: Herder & Herder, 1967.

10. Daniel Bell, editor, Toward the Year 2000. Boston: Houghton Mifflin Company, 1968.

11. Reinhard Bendix, Embattled Rea n: Essays on Social Knowledge. New York: Oxford University Press, 1970, 396 pages, $9.75.

12. Warren G. Bennis and Philip E. Slater, The Temporary Society. New York: Harper & Row, 1968.

13. S. Bogoch, editor, The Future of the Brain Sciences. New York: Plenum Press, 1969.

14. Robert Boguslaw, The New Utopians: A Study of System Design and Social Change. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1965.

15. Philip K. Book, Culture Shock. New York: Alfred A. Knopf, Inc., 1970.

16. Kenneth E. Boulding, The Meaning of the Twentieth Century: The Great Transition. New York: Harper & Row, 1965, 208 pages, $1.45 paper.

17. Carl Bratten, The Future of God. New York: Harper, 1969.

18. Zbigniew Brezezinski, America in the Technetronic Age. New York: Columbia University Press, 1967.

19. Zbigniew Brezezinski, Between Two Ages: America's Role in the Technetronic Age. New York: Viking Press, 1970.

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LEARNING GUIDE SECTION 17:

A Selective Guide to Futures Films

Introduction

In conjunction with this futures studies curriculum development project, an extensive sampling and critical evaluation of pertinent 16 mm. films was undertaken with Mr. Cameron MacCauley, Director, Extension Media Center, University of California, Berkeley, California 94720.

A brief survey article and other useful information based on the EMC study was published in the October, 1972 issue of the EMC newsletter, Lifelong Learning, Two-72, a copy of which will be sent without charge upon request to the Extension Media Center. Also upon written request to EMC without charge, the EMC Catalog will be sent.

Other useful publications dealing with futures films are:

1. Science Fiction in the Cinema by John Baxter. New York: Coronet Communications Paperback Library, 1970, 237 pages, $1.25, paper.

2. Films on the Future: A Selective Listing, by Marie Martin. World Future Society Book Service, 1971, 33 pages, multilithed, unbound, $2.00.

3. "The 21st Century," a brochure describing the 49 films based on the 1968-1969 CBS TV series narrated by Walter Cronkite, will be sent without charge upon written request to: Sales Service Department, Contemporary/ McGraw-Hill Films, 330 West 42nd Street, New York, New York 10036.

Except as otherwise noted below, all films listed here may be rented from the Extension Media Center. (You may also wish to check with other film distributors). Whenever available, the EMC catalog number is given with the listing to facilitate inquiries.

A Selective Listing of Futures Films

1. "00173" (Contemporary/McGraw-Hill, 9 min., color) A surrealistic film about a butterfly which briefly restores humanity to a human robot production line, only to be destroyed for it.

2. "1985" (EMC 7980, 60 min., color) Metromedia Television newsmen cover U.S. ecological Armageddon as pollution finally does us in.

3. Aging: The Search For Eternal Youth. We meet some vibrant senior citizens and watch the wealthy struggle to regain youth.

4. Air. Barry Commoner comments as the air pollution trip unreels. Interesting actual trip down a respiratory tract to see what dirty air does to our lungs.

5. Alone In The Midst Of The Land. (EMC 8234) Ecological version of "The Last Picture Show," as a safety-garment-clad lone figure looks at "old" films in the future to see how pollution destroyed us.

6. America and Americans (EMC 8202). John Steinbeck's personal views on America's past and future, based on his 1966 book.

7. The Arctic: Our Last Chance. Asserts that the Arctic is a world resource and documents struggle for future between oil men and conservationists.

8. Armaments: The War Game. Opens with a simulated nuclear attack on North America, comments by Jerome Bruner, Donald Brennan, concludes with plea for world disarmament.

9. Arts: Exploring Inner Space. Visits a light sculptor, a Moog concert, an experimental film maker, and a new Off-Off Broadway theater company to seek future trends in the arts.

10. Biochemedical Revolution: Moods of the Future. Accepts fact that mood drugs will be used, asserts we must become more discriminating in their use--and in judging users.

11. The Brain: Creating The Mental Giant. Visits brain researchers, Arthur C. Clarke, ponders what large average IQ increase might accomplish in society.

12. But What Do We Do? (EMC 7653). A bright young engineer drops out of the defense research establishment to work for peace.

13. Can We Control The Weather? Documentary tour of research and demonstration programs aimed at extending, improving weather forecasts and ultimately at controlling weather.

14. Chain Of Life. Documents the widespread, permanent disruption of the ecological food chain caused by unknowing, uncaring rape of the natural environment.

15. Cinema: The Living Camera. An interesting tour with experimental film makers, elementary school "producers," and a sequence from film "Square Inch Field."

16. Cities: Living In A Machine. A romanticized, designer's eye view of the wonderful new cities they would like to build.

17. The Cities: To Build A Future. A 1968 CBS-TV documentary showing promising revitalization of downtown Philadelphia, other hopeful developments in urban areas.

18. Communications. ("Projections 70" series, American Educational Films, 24 minutes, color) Sponsored by Standard Oil Company (Ohio). Smorgasbord overview of recent and prospective developments in telephone, computer, other communication forms.

19. Communication: The Wired World. Examines future consequences of current competition between telephone and cable TV to become tomorrow's dominant communication mode.

20. Computer Animation (EMC 7707). A fascinating, guided tour through the field as of 1970, with many examples shown.

21. Concrete Poetry (EMC 7892). An interesting example of how visual and audio effects are used with words as poetry.

22. Cosmic Zoom. A dizzying tour from human scale out to depths of universe, back, down to sub-atomic scale, back. See also Powers of Ten below.

23. Crime: Dye Guns, Lasers, Justice? Deals with future implications both of new anti-crime technology and of underlying causes of crime.

24. Cross-Channel Hovercraft (EMC 7704). We ride across the English Channel, and visit with hover ferry's developers.

25. Distinction of Past and Future. Eminent physicist Richard Feynman gives an extensive but interesting lecture on entropy, thermodynamic laws, and irreversibility of Time.

26. Ecology: The Silent Bomb. Examines some promising current research--collective and personal--on how wemay restore environmental quality by conserving environmental resources.

27. Education. ("Projections 70" series, American Educational Films, 25 minutes, color, $25 rental). Sponsored by Standard Oil Company (Ohio). Enthusiastic look at instructional technology hardware.

28. Education: No More Teachers, No More Books. Takes a hopeful look at Seventies when learner-directed learning will replace teacher-directed teaching.

29. Embryo (EMC 8190). We witness the actual development and hatching of a wildfowl chick. Fascinating.

30. Energy: Toward The Age of Abundance. Report on energy growth, the energy gap, and research devoted to closing it.

31. Evolution In Progress. We witness a scientific observation which shows vividly how human pollution shifts natural selection.

32. Family: Lifestyles Of The Future. Examines some interesting alternatives to the traditional primary nuclear family.

33. Flying: From Here to Infinity. Visits Paris Air Show, a 747 flight, and clips from "2001" to suggest the urge for aerial adventure will evolve into new feats of daring.

34. Food. ("Projections 70" series, American Educational Films, 25 minutes, color). Sponsored by Standard Oil Company (Ohio). Tells us that USDA research and the food industry will increase supply, improve quality of food, feed the starving.

35. Food: Surviving The Chemical Feast. Tells us that food industry emphasis on chemicals and technology are posing serious nutrition problems for the future.

36. Free Growth (EMC 8126). Holds that learning occurs in many different ways, and that individual differences must be accommodated.

37. Future and the Negro (EMC 6825). An in-depth, international 1965 panel discussion which remains as timely now as it was then.

38. Future Shock: Crisis in the 800th Lifetime. With commentary by Alvin Toffler, film tells us what it is, and what some people are doing to cope with it.

39. The Futurists (EMC 7426). Walter Cronkite visits with several futurists (1967), who voice their futures concerns.

40. Games Futurists Play. ("21st Century" series, Contemporary/McGraw-Hill, 1968). Watches The City Game and a sensitivity training game, explains games are used by futurists.

41. Genetics: Man the Creator. An absorbing eye-witnes tour of a sperm bank, artificial womb, and most other aspects of the Genetic Revolution.

42. Holography (EMC 7706). A richly informative demonstration and discussion of laser holography 3-D imaging methods.

43. Homo Sapiens (Contemporary/McGraw-Hill, 10 minutes, color). An amusing animated cartoon on man's rise through technology up to his discovery of extra-terrestrial intelligence.

44. House of Man--Our Crowded Earth (EMC 7811). Photography and narration explain the links between population growth, resource depletion, and pollution, calls for better planning.

45. Idea of the City (EMC 7435). Economist John K. Galbraith explains how the city has changed, and what we must do about it now.

46. The Industrial Worker (EMC 8135). Confronts the problems of the unskilled and semi-skilled worker rendered permanently unemployable by automation.

47. Industries of the Future. ("21st Century" series, Contemporary/McGraw-Hill, 25 minutes, color). Examines fluidics, materials revolution, micro circuitry, new energy sources.

48. Inside Out (EMC 8306). A New York University professor offers an absorbing contrast between Harlem's Black ghetto schools and the vibrant Philadelphia Parkway School.

49. It's Nation Time (EMC 8347). NET Black Journal documents in gripping fashion the speakers and main themes from the 1970 Pan-African Congress in Atlanta, Georgia.

50. La Jettee (Pyramid Films, 29 minutes, black/white). A French "photo-romance" with English sub-titles which probes some of the paradoxes which time travel would involve.

51. Life Line In Space (Pyramid Films, 13 minutes, color). A NASA kids-show-TV-cartoon hymn in praise of daring space logistic engineers at work in the near future.

52. Machine (Pyramid Films, 10 minutes, color). An imaginative, animated cartoon statement of how men fall into the trap of the technological imperative.

53. Management of Creativity (EMC 7781). Engineering managers and engineering studies speak separately (and often in disagreement) about how students should fit into the engineering establishment.

54. Management: The New Challenges (EMC 7777). Presidents, top managers, and others comment on how corporations must and are trying to respond to pressure for social responsibility.

55. Man Amplifiers (EMC 7713). Several robots under development are demonstrated and discussed.

56. Man and the Second Industrial Revolution. (Contemporary/McGraw-Hill, 19 minutes, color). A 1970 ABC-TV documentary which holds that technology is the key to the future.

57. Man-Made Man (EMC 7423). From the "21st Century" series. Looks at organ transplants, artificial organs, prosthetic devices, and a brain transplant.

58. Mass Transit: Up, Up, and Away. Foresees the demise of the automobile in North America by 2000, examines many mass transit experiments which will speed the funeral.

59. A Matter of Survival (Contemporary/McGraw-Hill, 30 minutes, color). Documents the human trauma in automation in a case example of an accounting supervisor who encounters the computer.

60. Medicine. ("Projection 70" series, American Educational Films, 25 minutes, color). Looks at organ replacement, research into causes of diseases, new medical hardware and personnel, and re-organization of health care delivery.

61. Mental Health: New Frontiers of Sanity. Points out that drugs have gotten mental patients out of asylums, then looks at some promising treatment-in-the-community programs.

62. Mind Of Man (EMC 8079). A long--119 minutes, color--but thoroughly fascinating documentation of current research on the human brain and its links with behavior.

63. Multiple Man (Contemporary/McGraw-Hill, 16 minutes, color). Expo 67's handsome cinematic tribute to the flexibility and magnificent variety of the human species.

64. Multiply and Subdue the Earth (EMC 7748). Film features environmental designer Ian McHarg, illustrating his views as set forth in his fine book, Design With Nature.

65. Music. Film visits with and listens to a number of contemporary non-traditional composers, from John Cage to a composer of biofeedback music.

66. Nude Marathon (EMC 7798). A tasteful, documentary look at this form of sensitivity training, exemplifying the growing human potential movement.

67. Oceans: Living In Liquid Air. A Florida/Carribbean tour with oceanographers and aquanauts showing and discussing their work.

68. Penology: The Keepers of the Keys. After documenting the grim treatment we impose on imprisoned convicts, film looks at some of the promising community rehabilitation efforts, and lets the prisoners say what they think about them.

69. The Physicists: Playing Dice with the Universe. An absorbing intelligible (to the lay person) account of the human drama and deeper significance in the intricate games modern physicists play.

70. Pollution Is A Matter Of Choice (EMC 7762). An NBC-TV White Paper which solidly links pollution to the lives we choose to lead.

71. Population and Pollution (EMC 8137). A somewhat facile but quick overview of the tie between population growth and pollution increase.

72. Poverty: Closing the Gap. A familiar but succinct and well done restatement of the Rich-Poor Gap, why and how we must close it, and what might happen if we don't.

73. Powers of Ten (EMC 8200). Based on Kees Boeke's book, "Cosmic View." Takes viewers from a Miami golf course to the depths of the universe , inside a golfer down to the sub-atomic level, and so back again. Resembles Cosmic Zoom (see Item 22 above)--less elegant but more informative.

74. Privacy: Can You Buy It? A light-hearted film which uses wry humor to document how technology has crept up on us and what that may mean for society.

75. Race Relations: Getting It Together. Quick review of black militancy in the Sixties and prospects for black clout in the Seventies based on votes, dollars--or more violence.

76. Real Revolution: Talks By Krisna-Murti. (EMC 8061) A truly wise and gentle Indian philosopher explains how improved listening and doing are required to deal with war, famine, and poverty.

77. Reflections on Time (EMC 7825). A mystic, dramatic treatment of subjective, objective, and geological time. A fine discussion opener.

78. Religion: Making the Scene. Harvey Cox and others maintain that the search is on in North America for religious ecstasy and transcendence which older denominations cannot offer.

79. Rise of New Towns (EMC 6854). The New Towns philosophy explained by the builder of Reston, Virginia and Columbia, Maryland.

80. Robots Get Smarter (EMC 7708). An industrial robot and two "brighter" experimental robots are demonstrated and discussed.

81. Rotary Combustion Engine (EMC 7787). An enthusiastic but detailed explanation of this revolutionary new power plant.

82. Safe Insect Control: No Silent Spring (EMC 7760). Lengthy discussion of biological (non-chemical) pesticides.

83. Seeds of Discovery (NASA, MRC Films, 26 minutes, color). A bit of NASA puffery narrated by TV actor James Franciscus which nonetheless neatly rounds up some of the space puzzles scientists hope to resolve in this decade.

84. Shape of Films to Come (EMC 7891). Offers looks at experimental films shown at Canada's Expo 67, plus other material.

85. Sirene (EMC 7878). A compelling cartoon allegory which bitterly suggests that man befouls himself with Technology.

86. The Sixth Continent (Contemporary/McGraw-Hill, 28 minutes, color). From the UN Television series, "International Zone." A tour with oceanographers and astronauts coupled with a plea for international control and disarmament of the seas.

87. Smalltown, U.S.A. (EMC 7156). A sentimental, pro-smalltown view which nonetheless manages to raise some questions about its future.

88. Sociobiology: Doing What Comes Naturally. A current film which invites biologists, psychologists, and anthropologists to share the latest research on why men act like men, women like women, and people like people.

89. Space Lab in the Sky. An informative guided tour of models and mockups for NASA's main Seventies space missions: Skylab and the space shuttle.

90. Space Place (EMC 7901). Creative film maker Charles Braverman's fresh statement of an Apollo moon shot.

91. Sports: The Programmed Gladiator. Suggests that blatant and thorough commercialization of organized sports will be completed in the Seventies.

92. Stranger Than Science Fiction ("21st Century" series, Contemporary/McGraw-Hill, 30 minutes, color). An intriguing comparison of old science fiction films and illustrations with recent technological achievements.

93. The Stuff We Throw Away (EMC 8113). A determinedly optimistic account of recent solid waste disposal demonstration programs.

94. Tamer of Wild Horses (Contemporary/McGraw-Hill, 8 minutes, color). A beautiful cartoon which suggests that Technology is Pegasus, a winged horse which threatens to unseat man until he is tamed, then carries him off in glory to the stars.

95. Technology: Catastrophe or Commitment. An illustrated debate on the joys and perils of technology by Buckminster Fuller, Gordon Rattray Taylor (Doomsday Book), and economist Robert Heilbroner.

96. Time Is (EMC 7098). A somewhat dated (1963) but imaginative exposition about Time, using bicyclists, dancers, etc.

97. Tomorrow's Television (EMC 8058). A 1969 PBL program which examines the conflicting interests involved in the development of cable television.

98. Tommorow Today("21st Century" series, Contemporary/McGraw-Hill, 30 minutes, color). Makes a somewhat narrow pass at the subject of simulation, basically limited to aircraft simulators.

99. Tragedy of the Commons (EMC 8115). Features biologist Garret Hardin in a crisp explanation of his classic essay by the same name (personal cupidity brings collective destruction of the environment).

100. Transportation (Projections 70 series, American Educational Films. Sponsored by Standard Oil Company (Ohio). Examines what's happening in surface transportation, says the automobile is here to stay.

101. The Ultimate Machine ("Life Around Us" series, Time-LIFE Films). A handsome and concise introduction to what a digital computer is, and how men are using and will use it.

102. The Unexplained. Ideal film for opening a futures studies course. A dizzying 56 minute tour along the cliffs between what is known and what is suspected.

103. Universities: Tearing Down The Ivy. An optimistic look at some experimental programs held to be transforming higher education in North America.

104. Urban Systems ("Projections 70" series, American Educational Films, 25 minutes, color). Comes on strong for how the systems engineers can save our cities.

105. View of America from the 23rd Century (EMC 8060). John Gardner uses a futures "put-on" to plead for basic renewal of our social institutions.

106. Water: The Effluent Society. A Canadian look at how the U.S. has fouled up its own waters, and now wishes to grab Canada's.

107. Weather: Who Votes For Rain? A documentary survey of how we hope to extend 24 hour detailed forecasts and five day general forecasts to two-week detailed forecasts--and regulate what happens as well.

108. Waste: Recycling the World. The Chief of the U.S. Solid Waste Bureau shows and tells us about old and new developments in this field.

109. Weird World of Robots ("21st Century" series, Contemporary/McGraw-Hill, 26 minutes, color). Documentary survey of robotics circa 1968 with demonstrations, experts' views, etc.

110. What's New At School? (EMC 8321). CBS-TV offers a sensitive look at how the Open Classroom came to Prairie View School in Devil's Lake, North Dakota.

111. Who Is Oscar Niemeyer? An extensive guided tour of the futuristic city of Brazilia through the eyes of the architect who dreamed it and built it.

112. Who Is: Victor Vasarely? He is the Hungarian-born founder of Op Art, and here he shows and explains what he is about.

113. Work. Economist Robert Theobald, 4-day-week expert Riva Poor, and others explain that jobs are vanishing although work is not.

114. Year of the Communes (EMC 8013). A sympathetic yet objective tour of a cross-section of contemporary American communal experiments, in which the participants speak for themselves.

LEARNING GUIDE SECTION 18:

A Referral Title List of Popular Recordings
for Use in Futures Studies

Introduction

If a church bell may fairly be counted a musical instrument, lyric strains reminding us of fleeting time, the future, and Eternity have pealed across the human landscape at least since the Thirteenth Century when monasteries sounded the tidings.

Futures music is thriving at present. Stanley Kubrick's theme for the film "2001"(taken from Strauss' "Thus Spake Zarathustria") is widely used as futures "signature" music. Gustav Holst's "The Planets" also often serves in the same role.

But it may be in popular music that notions of time and the future have their most frequent expression. Casually at hand at the moment, for example, are three albums: Jazz saxophonist, Yusef Lateef's fine composition titled "1984" (Impulse, Stereo A-84); the Steve Miller Band's album, "Children of the Future" (Capitol SKAO 2920), and a funny trifle, "The In Sound From Way Out! Electronic Pop Music of the Future" (Vanguard VSD 79222).

Much "academic," "serious," and "respectable" futures studies and futures research--like the curriculum outlined elsewhere in this report--is based exclusively in reasoned logical analysis. Perhaps this is inevitable--and perhaps not. It may well be that the abstract, intellectualized approach to futures studies to the exclusion of all else is in fact out of tune with significant trends now shaping the human future.

Reason uninformed by sentiment has always been widely suspect in Western Civilization, and certainly in American society. Once it may have been that the "intellectual" could be safely dismissed as "an egg-head," "a dreamer," or "an absent-minded professor." More recently, we have seen that the physicist's strange squiggles descend from the clouds shaped like mushrooms. Accordingly, many bright, sensitive young people equate "reason" with all the worst that Technology might do to us--and probably will. Herein lieth one dimension of the Generation Gap: The Fathers know how to get things done, but the Sons feel that most of what is done is wrong.

All of which serves by way of introduction to a listing of popular music titles possibly pertinent to the future which was prepared in 1969. The listing is included because the actual titles given may yield some interesting and diverting student or faculty research and--more important--with the hope that it may stimulate further thought and experiment with "futures music"--whatever that may prove to be.

April 1969

A COMPREHENSIVE LISTING OF POPULAR RECORDED MUSIC COMPILED FROM THE "PHONOLOG" CATALOG IN THE SAN FRANCISCO STATE COLLEGE LIBRARY

(Note: Criteria for inclusion in this listing were the purely intuitive ones of the compiler, based on an inspection of titles. Many titles beginning with the words "If," "I will," "I'll," "I'm gonna," "I'm," and "Keep on" were deliberately excluded, on the grounds that their variety and intrinsic interest were too narrow to justify a commensurate lengthening of the list. Readers interested in these excluded titles should consult the Phonolog which is readily available in many public libraries and major record shops. Many songs are available on multiple disks, of which only one or a few at most are indicated here.)

By David C. Miller

TITLE	CODE
1. Ain't it funny how time slips away	MGM 33 (S) 4530
2. Above the stars	ACO 33 (S) 144
3. Ad infinitum	ATC 33 (S) 1442
4. All my tomorrows	CAP 33 (S) ST-1538
	PLA 33 (S) 2196
	CAP 33 (S) 2196
5. All of my life	WER 33 (S) 61024
6. All the dearly beloved together forever	VIC 33 LOC & 33 (S) LSO-1120
7. All things are possible	CAD 33 (S) 767
8. All tomorrow's parties	VRV 33 (S) 6-5008
9. Amanha (tomorrow)	PHL 33 (S) 50034
	LIM 33 (S) 86044
	VRV 33 (S) 6-8676
10. Among the stars	AUF 33 (S) 6142
11. Anticipation	CTP 33 3605 & (S) 7605
12. As long as there's forever	CAP 33 (S) ST-2659
13. As the years go passing by	STX 33 (S) 723
14. As time goes by	VIC 33 (S) LSP-3899
15. Astro guitar	DEC 33 (S) 74337
16. Astrologically incompatible	IBR 33 (S) 1732
17. Automation song	WAK 33 (S) 74020
18. Beginning, The	SAV 33 12103
19. Best is yet to come	COL 33 (S) CS-8669
20. Better times a-coming	EPC 33 24144 & 33 (S) 26144
21. Beyond the blue horizon	KAP 33 (S) 3439
22. Beyond the moon	SAV 33 12018
23. Beyond the stars	LON 33 LL-1417
24. Billion dollar brain (computer)	WAR 33 (S) 5174
25. Blast off	SAV 33 12160

TITLE	CODE
26. Blue planet	ROV 33 & 33 (S) 25322
27. Blues in space	SAV 33 12103
28. Bomb the moon	EPC 33 24249 & 33 (S) 26249
29. Boy with a future	DEC 33 (S) 74045
30. Brave new world	LON 33 (S) PS-44058
31. Burky-it-yourself time capsules	DOT 33 (S) 25880
32. Calling all comets	EP 2416 33 8345 (? company)
33. Call tomorrow	DER 33 (S) 18019
34. Change is gonna come	VRV 33 (S) 6-5007
35. Change of century	ATC 33 (S) 1327
36. Changes	VAN 33 (S) S 79269
37. Changing times	CAP 33 (S) ST-2810
38. Changing with the times	CAP 33 (S) ST-2567
39. Chant to the sun	CBS 33 (S) PS-304
40. Child of the moon	LON 45 908
41. Children of the future	CAP 33 (S) SKAO-2020
42. Chopin, new time	EPC 33 (S) 26226
43. Chromatic universe	DEC 33 (S) 79219
44. Chronology	ATC 33 (S) 1317
45. Come tomorrow	ACT 33 (S) 16018 (?ATC?)
46. Come up the years	VIC 33 (S) LSP-3584
47. Cosmic brotherhood	IPE 33 (S) 9164
48. Cosmic consciousness	WPR 33 (S) 21445
49. Cosmic daddy dancer	ARC 33 (S) 593
50. Cosmic music	IPE 33 (S) 9148
51. Cosmic rays	ATC 33 (S) 593
52. Cosmic remembrance	WPR 33 (S) 21875
53. Countdown	COL 33 CL-1775 & 33 (S) CS-8575
54. Crystal ball	ACO 33 (S) 267
55. Daily, nightly	COM 33 & 33 (S) 104
56. Daily planet	ELK 33 & 33 (S) 7-4013
57. Dark star	WBR 45 7186
58. Days of future passed	DER 33 (S) 18012
59. Destination space	LON 33 (S) S[illegible] 44040
60. Don't ask for for tomorrow	CAP 33 (S) ST-2788
61. Don't mention tomorrow	EPC 33 24213 & 33 (S) 26213
62. Electronic music	VAN 33 (S) 79286
	VAN 33 (S) 79222
	VAN 33 (S) 79264
CMD	VAN 33 (S) 938
	LIM 33 (S) 86050
63. E.S.P.	COL 33 CL-2530 & 33 (S) 6-8706
64. Eternally	COL 33 CL-2525 & 33 (S) CS-9325
65. Eternity	RPS 33 (S) 6230
66. Eternity's children	TNR 33 (S) ST-5123
67. Eventually	ATC 33 (S) 1317
68. Everyone's gone to the moon	KOM 33 (S) 4394
69. Far side of the moon	CAP 33 (S) ST-2432
70. Fate	VIC 33 (S) LSO-1112

TITLE	CODE
71. Feast at Delphi	NBR 33 (S) 7304
72. Fickle hand of fate	STR 45 793
73. Fields of the sun	ACO 33 (S) 227
74. Fire star	ACO 33 (S) 170
75. Forever afternoon	DTR 33 (S) 18012
76. Fortuna	COL 33 (S) CS-9374
77. Fortunato	IPE 33 (S) 9139
78. Fortune teller	LON 33 (S) PS-493
79. Fourth dimension	LIB 33 (S) 8027
80. From here to eternity	VRV 33 (S) 6-5048
81. Future	CRS 33 (S) 2038
82. Futuristic sounds of Sun Ra	SAV 33 12169
83. Gardens of the moon	CAP 33 (S) ST-1846
84. Gemini	COL 33 CL-2746 & 33 (S) CS-9546
85. Getting ready for tomorrow	SOC 45 767
86. Give me tomorrow	VIC 33 (S) LSP-4021
87. Golden apples of the sun	WRK 33 (S) 7222
88. Goodbye is not forever	DOT 33 (S) 25857
89. Here today and gone tomorrow	COL 33 CL-2702 & 33 (S)CS-9502
90. History repeats itself	DEC 33 (S) 74796
91. How can I face tomorrow	DSC EP 2768
92. How long is forever	VIC 33 (S) LSP-3659
93. How many lifetimes will it take	VIC 33 (S) LSP-3693
94. How many more years	CSS 33 1434
95. How soon	VIC 33 (S) LSP-3428
96. Hundred years from now	TNR 33 (S) 5021
97. Hundred years from today	COL 33 CL-2330 & 33 (S) CS-9130
98. I ain't gonna work tomorrow	VIC 33 (S) LSP-2450
99. I can see a new day	COL 33 CL-2257 & 33 (S) CS-9057
100. I'd give a million tomorrows	EPC 33 (S) 26186
101. I didn't know the world would last this long	VIC 33 (S) LSP-3998
102. I don't want to see tomorrow	CAP 33 (S) ST-2118
103. I dreamed of a cowboy heaven	SOE 33 44
104. I dreamed of a hillbilly heaven	CAP 33 (S) 1623
105. I dreamt I died	MER 33 (S) 61158
106. I'd trade all my tomorrows	VIC 33 (S) LSP-2471
107. If tomorrow	ABC 45 10910
108. If tomorrow could be yesterday	DOT 33 (S) 25866
109. If I lose you tomorrow	DOT 33 (S) 25894
110. If I live to be a hundred	DMD 33 (S) 5005
111. If ever I would leave	COL 33 *CL-2088 & 33 (S) CS-8888
112. I guess I'll have to change my plans	CAP 33 (S) DT-1919
113. I guess I'll have to dream the rest	COR 33 57165
114. I hate to see the sun go down	VIC 33 (S) LSP-3472
115. I hate to see me go	LON 33 (S) PS-527
116. I hope I lose my memory	IMP 33 (S) 12412
117. I hope, I think, I wish	VIC 33 (S) LSP-3591
118. I hope she's there tonight	RPS 33 (S) 6224
119. I just can't wait	COL 33 KOL-5730 & 33 (S) KOS-2130
120. I just thought of the moon	CAP 33 (S) ST-2977

	TITLE	CODE
121.	I just want tomorrow back again	VIC 45 47-9579
122.	I know I never will	LTD 33 4003 & 33 (S) 8003
123.	I know it can happen again	VIC 33 (S) ISO-1009
124.	I know that you'll be there	WHL 33 (S) 112
125.	I know that you'll come back	KAP 33 (S) 3229
126.	I know we'll be together	CRO 33 (S) 20000
127.	I know what I want	CHK 45 1194
128.	I know where I'm going	VIC 33 (S) ISO-6007
129.	I leave the Milky Way	IMP 33 (S) 12171
130.	I'll be alright tomorrow	DEC 33 (S) 74767
131.	I'll be lucky some day	CAP 33 (S) ST-2851
132.	I'll be me	EPC 33 24063 & 33 (S) 26063
133.	I'll be on that good road some day	COL 33 CL-2354 & 33 (S) CS-9154
134.	I'll be ready when the great day comes	EPC 33 SN-6042
135.	I'll cry tomorrow	WBR 45 7176
136.	I'll never pass this way again	IMP 33 9356 & 33 (S) 12356
137.	I'll remember tomorrow	PZZ 33 (S) 83
138.	I'll try again tomorrow	CAP 33 (S) ST-2403
139.	I lost tomorrow	MCR 33 2056 & 33 (S) 3056
140.	I may be back	LIB 33 (S) 7534
141.	I may be wrong but I won't be wrong always	DEC 33 (S) 18016
142.	I may fall again	DEC 45 31440
143.	I may never fall in love with you	CAP 33 (S) SW-2152
144.	I may never get to heaven	COL 33 CL-2629 & 33 (S) CS-9429
145.	I may never pass this way again	VIC 33 (S) LSP-1885
146.	I'm getting ready for tomorrow	IMP 33 (S) 12334
147.	I'm going home next summer	HIC 33 126
148.	I'm gonna be free [illegible]	ABC 33 (S) 593
149.	I'm gonna be king	DEC 33 (S) 18010
150.	I'm gonna build a heaven of my own	PRS 45 405
151.	I'm gonna buy a people	JUB 33 (S) 8013
152.	I'm shootin' for tomorrow	DEC 33 (S) 74997
153.	In another time	VRF 33 (S) 3040
154.	Inevitable end	BLN 33 & 33 (S) 8-4262
155.	Infinidad	VRV 33 (S) 6-8707
156.	Infinity	SAV 33 12048
157.	In life, everything passes	KAP 33 (S) 3229
158.	Inner space	DHL 33 & 33 (S) 50019
159.	In some time	DOT 45 240
160.	In the ocean of time	EPC 33 24319 & 33 (S) 26319
161.	In the valley of the moon	IMP 33 (S) 12105
162.	Interstellar overdrive	TWA 33 T and 33 (S) ST-5093
163.	In time	TWA 33 (S) ST-5029
164.	Into space	LIB 33 3084 & 33 (S) 7005
165.	Invaders, The	VIC 33 LPM & 33 (S) ISP-3475
166.	I ride to no here	DHI 33 (S) 600276
167.	I see a change is gonna come	SID 45 927
168.	I shall be free	COL 33 CL-1986 & 33 (S) CS-8786
169.	I shall be released	WBR 33 (S) 1751
170.	I shall go unbounded	VAN 33 (S) 79206

TITLE	CODE
171. I shall miss you	MGM 33 (S) 7000
172. I shall remember	RPS 33 (S) 6295
173. I shall scream	VIC 33 (S) ISOD-2004
174. I took the blues out of tomorrow	SUE 33 16
175. It's almost tomorrow	DEC 33 (S) 74477
176. It's a lovely day tomorrow	DEC 33 (S) 74759
177. It's a new world every day	MGM 33 (S) 4511
178. It's so hard to face tomorrow	SUN 33 46
179. It's tomorrow	EMC 45 5-10123
180. I've got nothing but time	LON 33 (S) PS-442
181. I've run out of tomorrows	TWR 33 (S) 5120
182. I want a new day	COL 33 CL-2612 & 33 (S) CS-9612
183. I will always remember	VPT 33 (S) 9700
184. I will always think about you	MER 33(S) 61165
185. I will be home again	VIC 33 (S) ISP-2231
186. I will come to you	LIB 33 (S) 7421
187. I will follow him	ATC 33 (S) 1447
188. I will follow you	ABC 33 (S) 469
189. I will live my life for you	COL 33 CL-2000 & 33 (S) CS-8800
190. I will love you	CAP 33 (S) ST-1761
191. I will take care of you	MER 45 72735
192. I will take you there	CAP 45 2364
193. I will understand	MGM 45 K-13992
194. I will wait for you	EMC 33 (S) 26247
195. Journey to the center of the mind	MST 33 (S) 6112
196. Journey to the stars	LIB 33 (S) 8029
197. Judgement day	VAN 33 & 33 (S) 7-4796
198. Junk age	SAV 33 12185
199. Jupiter, Mars	MGM 33 (S) LSO-1137
200. Just a matter of time	VTF 33 (S) 4003
201. Just beyond the moon	CAP 33 (S) ST-786
202. Just tomorrow	PUZ 33 (S) 66
203. Kahlil the prophet	BLN 33 (S) 84165
204. Keep your eye on tomorrow	MGM 45 K13908
205. Keeper of time	[illegible] 33 (S) 1692
206. Kingdom of heaven	[illegible] 33 (S) 1
207. Kiss tomorrow goodbye	EMC 33 (S) 26247
208. Land of tomorrow	MGM 45 K13804
209. Last of my future	MER 45 72785
210. Later for tomorrow	DUK 45 411
211. Less than tomorrow	CAP 33 T & 33 (S) ST-2200
212. Let me tell your fortune	LIB 33 (S) 7428
213. Life is a constant journey home	SUN 33 (S) 74948
214. Life is a dream	MID 33 (S) 600251
215. Life is but a moment	COL 33 (S) CS-9652
216. Life is short	ASH 33 (S) 1008
217. Life is too short	VIC 33 (S) 754046
218. Life time	CAP 33 (S) ST-2927
219. Lifetime	THL 45 4025
220. Life will pass you by	EMC 33 24333 & 33 (S) 26333

TITLE	CODE
221. Line of fate	VAN 33 (S) 79256
222. Little bit later on	DEC 33 (S) 79222
223. Little pink missile	SAV 33 12185
224. Live for tomorrow	COL 33 CL-2081 & 33 (S) CS-8881
225. Look ahead	OKH 45 4-7322
226. Looking into the future	KAP 33 (S) 3462
227. Lost in the mood of changes	SPA 33 (S) 67080
228. Lost in the stars	DEC 33(S) 79120
229. Lost souls of Saturn	LIB 33 (S) 7005
230. Love everlasting	LON 33 (S) [illegible]S-191
231. Love gets better with time	DEC [illegible] 2767
232. Love goddess of Venus	LIB 33 (S) 8027
233. Love goes on forever	MER 33 (S) 61120
234. Love me as though there were no tomorrow	CAP 33 (S) ST-2809
235. Love me like there's no tomorrow	CAP 33 (S) ST-2937
236. Love me not tomorrow	AAM 33 (S) 4111
237. Love me now, hurt me later	MNT 33 (S) 18072
238. Love me tomorrow	[illegible] 33 (S) 22
239. Love takes a long time growing	ACO 33 (S) 188
240. Love that lasts forever	VIC 33 (S) SLP-3834
241. Love will endure	VAN 33 (S) 79179
242. Make way for tomorrow	COL 33 OL-6440 & 33 (S) OS-2840
243. Man from Mars	VIC 33 LPT-6000
244. Man without a dream	VRV 33 (S) 6-5010
245. Martians go home	ATC 33 1212
246. Maybe next year	CTA 33 3514
247. Maybe tomorrow	MGM 33 (S) 4586
248. Mechanical world	ODE 33 Z12-44003 & 33 (S) Z12-44004
249. Melody of the stars	COL 33 CL-2574 & 33 (S) CS-9374
250. Million heartbeats from now	VIC 33 (S) LSP-3668
251. Million more tomorrows	PHS 33 (S) 7418
252. Memory for tomorrow	CAP 33 (S) ST-2914
253. Men from Mars	VRV 33 (S) 6-8558
254. Mind and time	CTA 33 3569 & 33(S) 7569
255. Mind bender	COL 33 CL-2656 & 33 (S) CS-9456
256. Mind excursion	BUD 33 (S) 5014
257. Mind flowers	MGM 33 (S) 4570
258. Mind gardens	COL 33 (S) CS-9442
259. Mind rocker	ACA 33 (S) 38003
260. Mind transferral	TWR 33 (S) ST-5094
261. More than yesterday less than tomorrow	APC 33 (S) 638
262. Morning means tomorrow	DOT 33 (S) 25717
263. My destiny	MER 33 (S) 60796
264. My destiny (is this)	TWR 33 (S) 5068
265. My future just passed	DEC 33 8267

	TITLE	CODE
266.	Mystery of tomorrow	SEP 33 (S) 556
267.	My time will come	ATC 45 2077
268.	My tomorrow	CHK 45 1150
269.	Never a thought for tomorrow	ABC 33 & 33 (S) 522
270.	Never is a long,long day	VIC 33 (S) ISP-3852
271.	New horizons	COL 33 CL-2785 & 33 (S) CS-9585
272.	New time—a new day	COL 33 (S) CS-9671
273.	New tomorrow	MGM 33 (S) 4546
274.	New world	HMG 45 553
275.	Next spring	ZZZ 33 (S) 31
276.	1983	CAP 33 (S) ST-111
277.	1984	RPS 33 (S) 6311
278.	1984	IPE 33 (S) 84
279.	1999 A.D.	LIB 33 (S) 8052
280.	No me tomorrow	MST 33 56100 & 33 (S) 6100
281.	No more tomorrow	AUD 33 (S) 7042
282.	No one can live forever	RPS 33 (S) 6188
283.	No tomorrow in sight	VIC 33 (S) LSP-3858
284.	Nothing can last forever	MGM 33 & 33 (S) 4430
285.	Nothing ever changes	PON 33 27555 & 33 (S) 67555
286.	Nothing lasts forever	LON 33 11-3497 & 33 (S) PS-497
287.	Nothing more to look forward to	ACO 33 & 33 (S) 152
288.	Odds against tomorrow	ATC 33 (S) 1334
289.	Or lord don't let them drop that atomic bomb on me	ATC 33 (S) 1377
290.	Old man time	ABC 33 (S) 465
291.	Old year is gone	___ 45 0043 (?)
292.	On a clear day you can see forever	VIC 33 (S) LSOP-2006
293.	One bridge at a time	VAR 33 (S) 6582
294.	One day at a time	VIC 33 LPM & 33 (S) ISP-3395
295.	One day next year	VIC 33 LPM & 33 (S) ISP-3691
296.	One day soon	VIC 33 LPM & 33 (S) ISP-3424
297.	One more mountain	LIB 33 3533 & 33 (S) 7533
298.	One more mountain (one more river)	MER 33 20991 & 33 (S) 60991
299.	One more mountain to climb	DOD 33 & 33 (S) 5008
300.	One of these days	ATC 33 (S) 1424
301.	One step beyond	LIB 33 (S) 7239
302.	Only forever	CAP 33 (S) SW-1574
303.	Only time will tell	DEC 33 (S) 79075
304.	Open up them pearly gates	CAP 45 5383
305.	Oracle	OSR 45 78
306.	Orbit six	CAD 33 (S)753
307.	Orbital velocity	ATC 33 (S) 1492
308.	Orion	___ 33 & 33 (S) ST-2666
309.	Our day will come	CAP 33 & 33 (S) ST-2082
310.	Out of time	LIB 33 (S) 7497
311.	Outer space	DOT 33 (S) 25880
312.	Over the rainbow	VIC 33 (S) ISP-3899
313.	Pars fortuna	IPE 33 (S) 9164
314.	Past is all the future I see	COL 33 (S) CS-9669
315.	Planet Earth	VRF 33 (S) 3015

TITLE	CODE
316. Planet of the apes	PRJ 33 (S) 5023
317. Premonition	BLN 33 (S) 84217
318. Prophecy of love	LIB 33 (S) 14041
319. Prophet, The	MGM 33 (S) 4517
320. Prophet Jennings	BLN 33 (S) 84115
321. Put it off until tomorrow	DEC 33(S) 74792
322. Rise, robots, rise	MST 45 649
323. Sad tomorrows	RPS 33 (S) 6165
324. Shape of things to come	TWR 33 (S) SKAO-5099
325. Solar race	LIB 33 (S) 8027
326. So little ahead	MCR 33 2157 & 33 (S) 3157
327. Someday	DUK 45 310
328. Someday	ABC 33 & 33 (S) 514
329. Someday	UAR 33 14015 & 33 (S) 15015
330. Someday	COL 33 CL-2698 & 33 (S) CS-9498
331. Someday	COL 33 CL-1996 & 33 (S) CS-8796
332. Someday, one day	CAP 33 (S) DT-2746
333. Someday, some ay	IML 45 54065
334. Someday, somewhere	FRA 45 980
335. Someday the rainbow	VIC 33 (S) LSP-2798
336. Some fine day	ATC 33 (S) 2-602
337. Some soon, some day	CDF 33 (S) Z12-44005
338. Some summer day	DEC 33 (S) 74834
339. Some Sunday morning	CAP 33 (S) ST-2389
340. Some sweet day	WBR 33 (S) 1381
341. Some sweet tomorrow	ABC 33 (S) 631
342. Something beyond	LIB 33 (S) 7537
343. Song of Jupiter	MGM 33 (S) 90400
344. Song of the moon	ACO 45 6475
345. Song of the universe	CAD 33 (S) 749
346. Sounds of time	ACO 33 (S) 240
347. Space	IPS 33 (S) 9146
348. Space coupe	SES 45 2545
349. Space flight	SAV 33 12092
350. Space girl	LON 33 (S) PS-442
351. Space jazz reverie	SAV 33 12169
352. Space man twist	BLN 33(S) 84108
353. Space march	COL 33 CL-2708 & 33 (S) CS-9508
354. Space odyssey	COL 33 CL-2775 & 33 (S) 9575
355. Space rock	DOT 33 (S) 25823
356. Space walk	VIC 33 (S) LSP-3833
357. Space walker	WHI 45 269
358. Spaceman's blues	ATC 45 2522
359. Speculation	SAV 33 12137
360. Star children	CGM (S) 104

TITLE	CODE
361. Star in flight	CAP 33 (S) ST-2577
362. Starting tomorrow	DEC 33 (S) 75054
363. Star track	VIC 33 (S) ISP-4058
364. Star trek	RLN 33 (S) 84285
365. Stranded in time	COL 33 (S) CS-9014
366. Surface of the moon	LIB 33 3537 & 33(S) 7537
367. T'morra, t'morra'	DEC 33 (S) 79126
368. Take me to tomorrow	KOS 45 695
369. Take your tomorrow	COL 33 CL-846
370. Talking atomic blues	COL 33 CL-2334 & 33 (S) CS-9134
371. Tapestry from an asteroid	SAV 33 12169
372. Taurus	ODE 33 Z12-44003 & 33 (S) Z12-44004
373. Taurus, the 20th	ATC 33 (S) 3006
374. Teller of fortune	DTN 33 204
375. Tell me tomorrow	DOT 45 249
376. Telstar	LIB 33 (S) 8053
377. Ten thousand tomorrows	VIC 33 LPM-6015
378. Theme from "outer space"	DOT 33 (S) 25547
379. There is life on Mars	ABC 45 10878
380. There'll be another spring	CAL 33 (S) 693
381. There'll be many tomorrows	MNT 45 1023
382. There'll be no tomorrow	COL 33 (S) CS-8798
383. There'll be other times	REP 33 (S) 2259
384. There'll be some blues tomorrow	VIC 33 (S) ISP-2895
385. There may be tomorrow	MNT 33 (S) 18072
386. There my future goes	CAP 33 (S) ST-2342
387. There's a brand new day on the horizon	VIC 33 (S) ISP-2999
388. There's a great day coming	ABC 33 (S) 432
389. There's always tomorrow	COL 33 (S) CS-9308
390. There's better times a'coming	DEC 33 (S) 74643
391. There's no tomorrow	DOT 33 (S) 25360
392. There will always be tomorrow	CPR 45 77878
393. There will be a tomorrow	CAP 33 (S) DT-2823
394. There will be better years	ABC 33 (S) 432
395. There will never be	VIC 33 (S) ISP-3874
396. These things called changes	VRV 33 (S) 6-8675
397. Things are changin'	COR 45 62522
398. Things I wann' do	CRP 45 40016
399. Things to come	SAV 33 12020
400. Things to come (shape of)	CHS 45 404
401. Third stone from the Sun	KOS 33 (S) 6261
402. Three ways from tomorrow	MER 33 (S) 61161
403. Till the end of time	COL 33 CL-2116 & 33 (S) CS-8916
404. Time is after you	COL 33 CL-2790 & 33 (S) CS 9590
405. Time is a thief	ATC 33 (S) 8158

	TITLE	CODE
406.	Time is tomorrow	AAP 33 (S) 3487
407.	Time lock	MCR 33 2128 & 33 (S) 3128
408.	Times is new	PRA 33 (S) 3014
409.	Times they are a-changin'	COL 33 CL-2105 & 33 (S) CS 8905
410.	Times to come	AAP 45 1010
411.	Time takes time	LON 33 (S) PS-423
412.	Time will not wait	KAP 33 (S) 3547
413.	Time will pass you by	MAL 45 591
414.	Today and tomorrow	COL 45 4-44668
415.	Tomorrow (Friml)	VIC 33 (S) LSC-2509
416.	Tomorrow (Michaels)	AAM 33 (S) 4140
417.	Tomorrow (Turnbull)	RPS 33 (S) 6283
418.	Tomorrow (Youngblood)	LVA 45 2097
419.	Tomorrow	UNI 33 (S) 73025
420.	Tomorrow afternoon	BLN 33 (S) 84180
421.	Tomorrow belongs to me	COL 33 AOL-6640 & 33 (S) KOS-3040
422.	Tomorrow comes	UAR 33 (S) 6632
423.	Tomorrow is a long time	VIC 33 (S) LS -3801
424.	Tomorrow is another day	OKH 33 (S) 14115
425.	Tomorrow is a window	HRC 45 1455
426.	Tomorrow is my turn	MER 33 (S) 60741
427.	Tomorrow is soon a memory	ACO 33 (S) 180
428.	Tomorrow is the question	CTL 33 3569 & 33 (S) 7569
429.	Tomorrow may never care	MTN 33 (S) 639
430.	Tomorrow morning (Bbb-Kander)	VIC 33 (S) LSO-1144
431.	Tomorrow morning	DEC 33 (S) 79075
432.	Tomorrow never comes	CAP 33 (S) ST-2851
433.	Tomorrow never knows	VOR 33 (S) 2001
434.	Tomorrow night (Coslow-Cross)	ATC 45 2337 (?#?)
435.	Tomorrow night (Hammack)	ATC 45 2337 (? #?)
436.	Tomorrow night	ARC 33 (S) 456
437.	Tomorrow proper	COL 45 4-44263
438.	Tomorrow song	MER 33 (S) 60890
439.	Tomorrow waits for today	MCR 33 (S) 3162
440.	Tomorrow will be better	KAAM 33 (S) 4118
441.	Tomorrow you won't even know my name	ACO 33 (S) 215
442.	Tomorrow's blues today	COL 33 CL-2693 & 33 (S) CS-9493
443.	Tomorrow's calling	LON 33 (S) PS-482
444.	Tomorrow's gonna be another day	CAM 33 (S) 101
445.	Tomorrow's just another day to cry	KAP 33 (S) 3462
446.	Tomorrow's love	LIB 33 (S) 8033
447.	Tomorrow's people	CAP 33 (S) ST-2916
448.	Tomorrow's tears	SOL 33 (S) 704
449.	Tomorrow's women	WHL 45 253
450.	Too many tomorrows	COL 33 (S) KS-2900

TITLE	CODE
451. Touch of time	MTN 45 1087
452. Toward a new religion	LIB 33 (S) 7537
453. Toys in time/over.of.time	FON 33 (S) 6754
454. Toys in time	CAP 33 (S) ST-2763
455. Train for tomorrow	RPS 33 (S) 6248
456. Turn of the century	ACO 33 (S) 223
457. Twenty-first century express	SPA 33 (S) 67090
458. Utopia	BIN 33 (S) 84275
459. Visa to the stars	VAN 45 35051
460. Wait tillnext year	DCM 33 (S) 4433
461. Wait till tomorrow	ACO 45 6417
462. Wait until tomorrow	RPS 33 & 33 (S) 6281
463. Walking in space	VIC 33 (S) LSO-1143
464. Walkinmy fortune	KAP 33 (S) 3469
465. Walkin on the moon	VIC 33 (S) LSP-3415
466. Waltz of the prophets	CAP 33 (S) ST-1796
467. War of the satellites	LIB 33 (S) 8027
468. What do I want for tomorrow	LON 33(S) PS-528
469. What will tomorrow bring	VIC 33 (S) LSP-3810
470. Whatever will be, will be	COL 33 CL-1720 & 33 (S) CS-8520
471. What's to become of what's left of me	UCR 45 1344
472. Wheel of fortune	CAP 33 (S) ST-2106
473. When April comes again	CAP 33 (S) ST-1192
474. When Gemini meets Capricorn	COL 33 KOL-5780 & 33 (S) KOS-2180
475. When God comes and gathers his jewels	CAM 33 (S) 3099
476. When I come home	UAR 33 (S) 6578
477. When I come home to you	LAP 33 (S) 12299
478. When I fall in love	VRV 33 (S) 6-5011
479. When I get home	CAP 33 (S) ST-2108
480. When I get the money made	DOT 45 209
481. When I get the time	ABC 33 (S) 576
482. When I get to the end of the way	MNT 33(S) 74508
483. When I grow too old to dream	ABC 33 (S) 470
484. When I lay down and die	ELK 33 (S) 7203
485. When I leave the world behind	DEC 33 (S) 70934
486. When I move to the sky	STJ 33 12024
487. When I'm being born again	VIC 33 (S) LSOP-2006
488. When I'm gone	ELK 33 (S) 7310
489. When I'm gone you'll soon forget	IMP 33 (S) 12277
490. When I'm sixty-four	CAP 33 (S) ST-2876
491. When it's all over	UAR 33 (S) 6453
492. When I've passed on	RPS 33 (S) 6253
493. When Johnny comes marching home	EBR 33 (S) 89901
494. When love comes to the human race	ATC 45 2360
495. When Messiah comes	COL 33 OL-6610 & 33 (S) OS-3010

	TITLE	CODE
496.	When my dreamboat comes home	ABC 45 10739
497.	When school is out this year	LIB 33 (S) 7563
498.	When spring comes	MER 33 (S) 60007
499.	When spring comes around	VIC 33 (S) ISP-3938
500.	When summer ends	VIC 33 (S) ISP 3901
501.	When summer is gone	LIB 33 (S) 7487
502.	When the black of your eyes turns to grey	CAP 33 (S) ST-2368
503.	When the boys come home	DEC 33 (S) 79126
504.	When the grass grows green again	DOT 33 (S) 25923
505.	When the grass grows over me	DEC 33(S) 75086
506.	When the green berets come home	MNT 45 1115
507.	When the hour comes	PCK 45 1862
508.	When the idle poor become the idle rich	COL 33 (S) CS-2080
509.	When the kids get married	VIC 33 (S) ISO-1128
510.	When the lights go on again	ABC 33 (S) 631
511.	When the music's over	PLK 33 (S) 74024
512.	When the red, red robin	COL 33 (S) CS-8471
513.	When the roll is called up yonder	HIR 33 (S) 32004
514.	When the roses bloom again	KOD 33 828
515.	When the saints go marching in	DEC 33 (S) 78893 & 33(S) DXSB7-173
516.	When the ship comes in	COL 33 (S) CS-8905
517.	When the snow is on the roses	VIC 33 (S) ISP-3913
518.	When the stars begin to fall	CAP 33 (S) DT-2746
519.	When the sun comes shinin' thru	AAM 45 974
520.	When the swallows come back to Capistrano	DXSB7-182
521.	When the walls come tumbling down	DEC 45 32394
522.	When the war is through	ABC 33 (S) OCS-5
523.	When the white lilacs bloom again	CAP 33 (S) ST-10389
524.	When the wind changes	INL 33 (S) 50007
525.	When the work's all done this fall	DEC 33 9105
526.	When the world is ready	KAP 33 (S) 3561
527.	When they ring the golden bells	DEC 33 2625
528.	When tomorrow comes	STA 33 (S) 718
529.	When we come of age	MGM 33 (S) 3934
530.	When we shall meet again	FCS 33 (S) 4202
531.	When, when, when	DOT 33 (S) 25927
532.	When will love rule the world	ABC 33 (S) OCS-5
533.	When will our day come	PRU 33 (S) 754130
534.	When will the good apples fall	CAP 33 (S) SKAO-2021
535.	When will the rainbow follow the rain	COL 33 (S) CS-9622
536.	When will the rain come	FON 33 (S) 67576
537.	When will the torch go out	COR 45 62452
538.	When you go (Hill-Barratt)	TWR 45 358
539.	When you go (Shoshana)	CO 45 62535
540.	When you return	DOT 33 (S) 144

TITLE	CODE
541. When your hair has turned to silver	COL 33 CL-586 & 33 (S) CS-8781
542. Where am I going	DEC 33 (S) 74700
543. Where are you going	MER 33 (S) 61082
544. Where are you going little boy	DEC 33 (S) 74694
545. Where are you going with the rain	VIC 33 (S) LSP-3661
546. Where can a man go from here	STX 33(S) 735
547. Where can tomorrow be found	ACO 33 (S) 239
548. Where do I go	VIC 33 (S) LSO-1143
549. Where do I go from here	COL 33 CL-1826 & 33 (S) CS-8626
550. Where do we go from here	VAN 33 (S) 79285
551. Where I'm bound	DEC 33 (S) 74656
552. Where is tomorrow	CAP 33 (S) ST-159
553. Where will you be	EPC 33 (S) 26134
554. Where you gonna go	LIB 45 55092
555. Where you gonna run to now	MTW 33 (S) 667
556. Who are the brain police	VRV 33(S) 6-653
557. Who knows what might have been	COL 33 KOL-5730 & 33 (S) KOS-2130
558. Who needs forever	VRV 33 (S) 6-8679
559. Who needs tomorrow	BIG 45 557
560. Who will you be tomorrow	DHI 33 (S) 50027
561. Why care another day	VAN 33 (S) 79267
662. Why does it have to change	___ 45 4-44560
563. Why wait until tomorrow	AMY 45 987
564. Will tomorrow be the same	DEC 33 (S) 74023
565. Will you be here tomorrow	VIC 33 (S) LSP-3541
566. Will you be ready for tomorrow	DEC 33 (S) 75009
567. Will you love me tomorrow	IMP 33 (S) 12320
568. Will you remember	VIC 33 (S) LSC-2090
569. Will you remember tomorrow	DEC 33 8664
570. Winds of change	MGM 33 (S) 4484
571. Won't it ever be morning	DEC 33 (S) 74998
572. World is waiting	WAR 33 (S) 1538
573. World is waiting for the sunrise	CAP 33 (S) DT-1476
574. World keep on turning	EPC 33 (S) 26402
575. World keeps going round	RPS 33 (S) 6197
576. Worlds of time	ATC 33 (S) 8143
577. Worst is yet to come	CRT 33 (S) 61097
578. Worst that could happen	SOC 33 91001 & 33 (S) 92001
579. Years from now	JOB 45 6002
580. Year 2001	BUD 33 1010 & 33 (S) S 10
581. You could be born again	PHJ 33 (S) 5031
582. You'll cry tomorrow	WAR 33(S) 6668
583. Yours until tomorrow	VIC 33 (S) LSP-3976
584. Your tomorrow	KAP 45 942
585. You take what comes along	COL 33 CL-2495 & 33 (S) CS-9295
586. You will come back again	RPS 33 (S) 6296
587. You will be loved	VIC 33 (S) LSP-3546

LEARNING GUIDE SECTION 19:

A Referral Title List of Poems for Use in Futures Studies

Introduction

You are the future, the great sunrise red
Above the broad plains of eternity.
You are the cock-crow when time's night has fled,
You are the dew, the matins, and the maid,
The stranger and the mother, you are death.

--Rainer Maria Rilke, 1875-1926

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Yesterday This Day's Madness did prepare
Tomorrow's Silence, Triumph, or Despair:
Drink! for you know not whence you came, nor why:
Drink! for you know not why you go, nor where.

--Omar Khayam, Trans. by
Edward Fitzgerald, 1809-1888

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To speculate about possible futures is to inquire about fresh visions. Rilke and Omar Khayam are two among many clear-sighted poets who since Time out of Mind have addressed themselves to the All, the Nothing, or the Certainly Something which may yet be.

It seems clear that the rising tide of interest in futures studies is grounded in a widely felt discontent with our present circumstances. If the better tomorrows we are grasping so eagerly--even desperately--for are to be truly better rather than merely "different", surely our visions must be refreshed and enlarged. It is in that spirit that this Referral Title List of Poems is offered.

The List was selected from a master list of titles presented in Granger's Index to Poetry, Fifth Edition, edited by William F. Bernhardt, Columbia University Press, Morningside Heights, New York, 1962. The intent was (and remains) to extract and consult all titles which in the reviewer's judgment sounded futures-relevant. The review is now complete through page 323 of the Index, and it is this partial list which is offered here, nearly 800 titles in all. The abbreviated references are those used in the Index, which provides complete references to the original volumes.

Many of the titles included here which to one reviewer sounded futures-relevant will undoubtedly be found not to be so when the actual poem is consulted. Many of the poems referred to probably are trivial, stale, or otherwise unacceptable. It is hoped, however, that some will be found enjoyable or useful in thinking about possible futures, and that this effort will inspire greater interest--perhaps even an anthology--in poetry dealing explicitly with the future.

A Referral Title List of Poems for Use in Futures Studies

Extracted from Granger's Index to Poetry, Fifth Edition, edited by William F. Bernhardt, Columbia University Press, Morningside Heights, New York, 1962. Coded references to poem sources are documented in the reference work cited.

1. A Is For Alpha; Aiken, NePA
2. Above the hills of Time; Tiplady, MaRV
3. The Acorn; Unknown, BoTP
4. Acorns; King, GFA, RAR
5. Across the forest of delay; Charles d'Orleans, LyMA
6. Address to the New Year; Craik, PEDC, PEOR
7. After a hundred years; Dickinson
8. After a time; Davis, NEPoEA
9. After a little while; Randall, CAW
10. After an interval; Whitman, AA
11. The after-comers; Lowell, AA
12. After dark vapours have oppressed our plains; BPN, EMPrPo, ERP, EV-4, EnRP, AtBAP
13. After death; Mason, AnNZ
14. After death; Parnell, AnIV, GTIV, OBVV, OnYI, OxBl, VA, PoFr, TIP
15. After death; Richardson, AA
16. New Year's Day; Lowell, NePoEA
17. Sun Orchids; Stewart, NeLNL
18. Against fulfillment of desire; Unknown, TrGrPo
19. Against fruition; Suckling, NBE
20. Sonnet XXIX; Shakespeare, PeBoSo
21. Against the fear of death; Lucretius, POD, AWP
22. Against time; Untermyer, MoAMpo(1924 ed.)
23. Bird, bird; Derwood, LiTa, PeBoSo
24. Against time and the damages of the brain; Agee, OnAP
25. Immortality; Mitchell, AA
26. Age cannot wither her; Shakespeare, Anthony and Cleopatra, II, EV-1, MaC
27. Evening; Garrison, AA
28. Age in prospect; Jeffers, BLV, BoLiVe, MAP, MoAB, MoAmPo, NeMA
29. Age and youth; Minnermus, AWP, OnPm
30. Ah, flood of life; Kirkconnell, CaP
31. The dream; Markham, OQP, QP-1
32. Death; Aleixandre, CoSP
33. Love, time, and death; Locker-Lamson, HBV
34. Elegy XI; Shenstone, CEP, OBEC, RO
35. Song; Goldsmith, GTIV
36. Rebel mother's lullaby; Leslie, BOL
37. Ah!Sunflower; Blake, AtBAP, AWP, BLV, EG, EiPP, others
38. Change; Coleridge, MoVE
39. Life's brevity; Villegas, TeCS

40. World ruin; Ramsaur, MaRV, MOM
41. Ah!when will this long weary day have end; Spenser, LO
42. The years; Theognis, GrPE
43. Prophets in their time; Longfellow, GrCo-1, WGRP
44. Desire and disillusion; Byron, EPN
45. The Countersign; Unknown, BLG, MDAh
46. The strengt' of fate; Alcestis, AWP, JAWP, WPB
47. All that was once mine is mine forever; Afanasi, Fet, BoR
48. The builders; Longfellow, BTP, FaFP, IAP, MaRV
49. All beautiful the march of days; Wile, MaRV
50. Epigram:fatum supremum; Unknown, OBS, SeCL
51. All hail the paegeant of the years; Holmes, MaRV
52. Life's brevity; Simonides, OnPM, AnFE, AtBAP
53. All impelled onward alike; Blair, EV-3
54. All is changing now; Goethe, PoFr
55. All is hidden, naught concealed; Robertson, MOM
56. All I do is dole out minutes; Shannon, SiSoSe
57. All lovely things will have an ending; Aiken, CAMO, CMP, ReaPO
58. The fear of dying; Holmes, MiAP
59. All roads lead to death; Unknown, GrPE
60. Universal change; Sophocles, LiTW, OxBG
61. Returning home; Von Eichendorff, OnPM
62. Elegies; IV-1, Propertius, LaP
63. All that's bright must fade; Moore, OxBI
64. All the forms are fugitive; Emerson, WGRP
65. Human progress; Whitman, GrCO-1
66. Life's a jest; Glycon, GrPE
67. The wind is ill; Brinnir, LiFA
68. Prolonged sonnet; Antella, AWP
69. The divine insect; Wheelock, GoYE
70. What the . allows say; Gautier, TFRP
71. Already the slim crocus; Wilde, PCH
72. Already; Spender, FaBoMO
73. Also sprach Zarathustra; Cannon, LlA
74. After? When the hills do; Dickinson, AnNe, OBAV, PIAE, TGAP
75. Alpha and Omega; Myers, OQP, QP-1
76. Always; Apollinaire, AnFP
77. Man; Greenberg, CrMA
78. Always; Morris, OBAV
79. Always comes evening; Howard, DaM
80. Always in the parting year; Lasker-Schuler, TrJP
81. Oxford bells; Sister Maris Stella, GoBC
82. Next, please; Larkin, NePoEA
83. Ambitious dreams; Soolary, TrFP
84. America: A prophecy; Blake, BoW, RO, EnRP
85. America, last hope of man and truth; Bates, PGD
86. Tall ambrosia; Thoreau, PoEL-4
87. An ancient prophecy; Freneau, PAH
88. I shall remember; Carberry, PoNe
89. An' in the grave we're safe, surely; Uknown, GrPE

90. In the end of days; Isaiah, TrJP (Bible).
91. Swords and plowshares; Isaiah, GrCo-1 (Bible)
92. When the days shall grow long; Bialik, TrJP
93. Moments; Schwab, TrJP
94. Nor will these tears be the last; Goethe, LiTW
95. Interlude; Davies, MoWP
96. Andromeda; Browning, OBRV
97. And so the day drops by; Tuckerman, AnNe
98. And the star and system rolling past; Tennyson, IMOP
99. Picture show; Sassoon, ChMO, CMP
100. Prelude to definition, I; Aiken, TwAmPO
101. Bible, Micah, IV:1-5, TreF
102. Oracles II; Johnson, VLEP
103. Another generation; Squire, HBMV
104. Another time; Auden, OxBA
105. Another year; O'Hagan, PEDC, PEOR
106. Another year; Norton, PEOR
107. Washington; Goodman, PGD
108. A New Year's promise; Unknown, BLRP
109. Another year is donning; Havergal, PraP, WBLP, BLRP
110. Anticipation; DeTabley, GTBS-D
111. Anticipation; Tosiani, GoYe
112. Time; Scott, BPN, EmBrPo
113. Immortality, XXXII; Unknown, TrFP
114. Roads; Knight, TVSH
115. Apprehension; Fraser, MaRV, OQP, QP-2
116. Apprehension; Unknown, OBVV
117. Approach of Age; Shakespeare, Sonnetts, XII
118. Approach of evening; Croly, IrPN
119. Approach of spring; Clare, ERP
120. Approach of winter; L. Forgoe, ANFP, TrFP
121. Approach of winter; Sackville, CoEV
122. Approach of winter; Thomson, OBEC
123. April's coming; Pollard, NLK
124. The archaeologist of the future; Bacon, WhC
125. Caterpillars' conversation; Findlater, DiM
126. Sorry prophet this, a worthless seer; Wordsworth, GrPo
127. Time's changes; Bramston, OBEC
128. As a man soweth; Goethe, MaRV
129. The lost days; Coolidge, PSO
130. Indian summer; Fannum, CAG
131. Boy fourteen; Hall, MuM
132. As I am now, so you must be; Unknown, WhC
133. As I grow old; Malloch, BPP
134. The little man who wasn't there; Mearns, FaFP, FaPON, InME
135. Scene-Shifter Death; O'Neill, NeIP
136. The two armies; Holmes, TCAP
137. Me; DeLamare, FaPON, TiPO (1959)
138. As nature works in all things to an end; Chapman, NBE
139. As night comes on; Wesley, GoYe
140. Song of summer days; Sheard, OCL
141. KoKo's song; Gilbert, EnLi-2(1949), LiTB, PoVP, SiTL
142. As soon as ever twilight comes; DeLamare, SiSoSe

143. Gestures to the dead;Wheelwright, MoVe
144. New Year's resolve; Wilcox, PEOR
145. New Year's prayer; Kramer, PEDC, PraP
146. As the stars go out; MacDonald, MaRV
147. As the twig is bent; Pope, TreF
148. As the world turns; Swift, OTPC(1940), YOAN
149. As the years go by; Wang Wei, Outte Wo
150. Lonely old age, Yuan Chen, PoHN
151. As time goes on; Von Westphalen, AnCL
152. As we get older; Whitlow, FiBHP, LiTM(rev. ed.)OnHM
153. As we grow older; Wells, PoToHe, WBLP
154. Tomorrow; Pedroso, AnCL, PoFr
155. As years do grow; Cecil, EIL, OBSC, PrWP
156. Spring; Thomson, EnSW
157. Choice; Elliott, OQP, QP-2
158. Aspiration; Drennan, IrPN
159. Aspiration; Duggan, JKCP(1955)
160. Aspiration, Ibn Hani, MooP
161. Aspiration; Tabb, LO
162. Aspiration; Thomson, OBVV
163. Aspiration; Wither, MaRV
164. Assured that you are doomed to die; Unknown, OxBG
165. The astral fates; Butler, BeR
166. Astrologer's song; Kipling, MBP, MoBroPo, NeMA
167. Astrology; Stephens, PR
168. The astronomer; Doherty, JKCP(1955)
169. Astronomers should treat of stars and comets; Pindar, PoP
170. The day of judgment; Buchanan, GoTS
171. At common dawn; Ellis, CH
172. At dawn; Fyleman, BoChLi
173. At dawn; Hugo, OnPM, TrFP
174. At dawn; Villa, CoSP
175. At dawn; Williams, FaBoTw
176. At dawn of the year; Klingle, PGD, PSO
177. To his dead daughter; Hugo, TrFP
178. At dawning; Eberhart, OlF
179. At daybreak when the falcon claps his wings; Villon, AWP
180. The dawning of the day; Unknown, OnYl, TIP
181. At early morn; Dismond, PoNe
182. Time; "AE," CAMO, CMP
183. Roosters; Bishop, CrMA, FiMAP, LiTM, NePA, OnHM
184. Waking time; Eastwick, SiSoSe, TiPo(1959)
185. At graduating time Unknown, DD, PEDC, PEOR, PoRL
186. Two songs in spring; Jones, VOD
187. Night thoughts IX, Young, GrCO-1
188. To retirement; Dobell, TrFP
189. Brotherhood; Davis, MaRV
190. Our hymn; Holmes, BOHV
191. At sunrise ; Marinoni, PoToHe
192. The voice; Gibson, CV, TCPD
193. There shall be no peace: Jeremiah, WOL (Bible)
194. At the beginning of winter; Unknown, BoFa, TrCh
195. At the beginning of winter, Unknown, WhP

196. At the crossroad: Manger, OnCuPh
197. At the crossroads; Hovey, BAP, BBV(1951), BLP
198. At the dawn; Kipling, MaRV
199. Morningsong; Ibn Gapiroc, TrJP
200. At the edge of the day; Urmy; HBMV
201. Phantoms; McGuire, CAW
202. At the end of the way; Von Heidenstam, AnSL
203. At the end of things; Waite, WGRP
204. The empty soul; Bowie, MaRV
205. The handwriting on the wall; Shaw, BLPA
206. At the New Year; Patchen, AnFe, CoAnAm, TwAmPo
207. The beginning of summer; Po Chu-i, TrCh
208. At the worst; Zangwill, WGRP
209. At waking; Wetherald, CPG
210. At winter's end; Sister Mary Madelane, JKCP
211. At year's end; Wilbur, LiTM(rev.), MiAP, NePA
212. When the hounds of spring; Unknown, BIV, BoLiVe, CoBe
213. Youth of the year; Unknown, BPN, EmBrPo
214. Auld lang syne; Burns, AWP, BCEP, BEL
215. Where there is no vision; Leigh, MaRV
216. Awake!;Rodgers, LiTM(rev.), WaP
217. Awake!;Von der Vogelweide, AWP, JAWP, OnPM, WBP
218. Awake, arise; Unknown, OxNR
219. Awake!Awake!; Ruskin, HBV, PoFr
220. The bells; Young, AA
221. Out of sleep; Curnow, AnNZ
222. On New Year's Day, 1640; Suckling, SiCV-1
223. Awake, mine eyes; Unknown, EIL
224. Awake my mate; Aristophanes, GrR
225. Thirty-first of May; Tennyson, VA
226. Awake thee, my lady love; Darly, HBV, VA
227. Awake, thou wintry earth; Blackborn, HH
228. Awakening of spring; Ku Shih, PoHN
229. To an early plum; Hsieh Hsieh, PoHN
230. Ay, but to die; Shakespeare, Measure for Measure, III-i, BCEP
231. Ay, once I dreamed of an age-wide sea; DeLamare, UmW
232. The baby; Taylor, DD, abr, MOAH, OHIP
233. Baby new to earth and sky; Tennyson, EmBrPo, ENLi-2, EPN
234. Baby's soliloquy; Unknown, PA
235. Resurgam; Bitton, BLRP
236. Sun; Goll, OnPM
237. Ballad of hope and fear; Madge, FaBoMo
238. Ballad of evolution; Allen, ATP(1935)
239. Ban of time; Burgess, InMe
240. Bards of the future; Dobson; PoVP
241. Be always in time; Unknown, OxNR
242. Great Tom; Corbet, OxBoLi
243. O mors aeterna; Gregory, ChMo
244. Be in me as the eternal moods; Pound, LEAP, MAP, MoAB
245. To end her fear; Freeman, OBMV

246. Prosit Neujahr; Santayana, InME
247. Procrastination; Young, AnEnPo, BCEP, EV-3, LPS-3
248. Reign of peace; Thornton, PEDC
249. Beauty, time, and love; Daniel, OBEV
250. The debt; Bates, OQP, QP-1
251. My instant; Leitch, LS
252. Before all time; Namdev, MaRV
253. Power that moves to good; Arnold, GrCO-2
254. Vista; Wilkinson, SBMV
255. Snowflake; DeLamare, AlDL
256. Before I see another day; Wordsworth, NBE
257. Before it is too late; Griffith; MOAH
258. Before it is too late; Sweet, PoToHe(new ed.)
259. Impenitentia ultima; Donson, HBV, POTT, VLEP
260. Triumph of time; Swinburne, EmBrPo, EtPaEn, PoVP, ViPa
261. Before spring; Ropes, BoTP
262. Apprehension; Ainslie, OBVV
263. Before the beginning; Rosetti, OBVV, OxBoCh
264. Music; Robinson, UnW
265. Before the ending of the day; St. Ambrose, OlF
266. To poetry and truth; Unknown, TrJP
267. Burden of time; Scott, CPB
268. Prognostication; Raleigh, SiPS
269. People going by; Roberts, GaP
270. Epitaph for the race of man;Millay, I, AmP
271. Oh, lawd, how long?; Unknown, ABF
272. Two voices; Verlaine, TrFP
273. Cassandra speaks; Ronsard; TrFP
274. Song; Davenant, MeLP, MePo, MeRV
275. Before winter; McCreary, MAP
276. Quartrain, Tu Fu, WhP
277. Beforehand; Bynner, HBMV
278. Begin again; Coolidge, MaRV, BLP
279. Begin again; Hall, NePoAM-2
280. Beginning and the end; Unknown, LyMA, PeOS
281. Beginning of Love; Keats, UnPO(lst ed.)
282. Beginning of summer, Po CHU-i, TrCH
283. Beginnings of day; Diaper, BeR
284. Behind me dips eternity; Dickinson, WoL
285. A new year; Shorter, YeAr
286. The new year; Hosmer, GrCO-2
287. Behold the rosy dawn; Drayton, SeCL
288. An epitaph on the death of Nicholas Grimald; ReIE, SICE, TriL, TOPP
289. Being to timelessness as it's to time; Cummings, NePA
290. Infallibility; Collier, AA
291. Time; Young, BCEP, LPS-3
292. Bellman's good morrow; Unknown, PoLi
293. Bells at midnight; Aldrich, PAH
294. Bells of new year; Field, PGD
295. Bells of youth; Macleod, BOTP, ReTS
296. The oracle, Von der Vogelweide, LyMA
297. Best not to be born; Archias, OnPM

298. Today; Wright, MOM
299. Of late and never; Heywood, TUPP
300. Of birds and birders; Heywood, SiCE
301. Better unborn; Unknown, GrPE
302. Bird watcher; Treece, ReaPo
303. The children's hour; Longfellow, AA
304. This little vigil; Bell, NePoAm
305. Between the traveller and the setting sun; Thoreau, PoEL-4
306. Life; Byron, GEPC
307. At last; Trask, AA
308. Beyond the end; Leverton, NeAP
309. Beyond the final breath; Lorraine, UnW
310. Beyond the grave; Bruner, AlBD, PoToHe
311. The hills of rest; Paine, HBV, MaRV
312. Beyond the last lamp; Hardy, MoVE, PoVP, TwCV
313. Beyond the profit of today; Unknown (new ed.)
314. Beyond the stars; Towne, UnW
315. Bide thou thy time; Newman, GoBC
316. The big clock; Unknown, TiPO
317. Bird of time; Davidson, MOM
318. Bird omens; George, AnGP
319. Birds of omen; Scott, EmBrPo, EnRP
320. Birth and death of pain; Mitchell, PoP
321. Lincoln; Ditmers, HBMV
322. Lines written in the realization that I must die; Howard, DaM
323. The black earth's always drinking; Unknown, GrPE
324. Death forgot; Celan, TrJP
325. I met a seer; Crane, CoBA
326. Blessings on the hand of women!; Wallace, FaFP,Tref, WBLP
327. At dawn; Hugo, OnPM, TrFP
328. Incarnation; Pierce, MaRV, MOM
329. Dream of the world without death; Buchanan, VA
330. Book of the dead; Boker, MOAP
331. I am the past and present and I bear; Hubbell, LiTW
332. Book of the new year; Unknown, PEOR
333. Anacreontic; Herrick, OAEP, OnPM, OxBoLi, WOL
334. On himself; Herrick, ChTr, SeCV-1
335. Born is the babe; Unknown, AnEC
336. Born yesterday; Larkin, HaMV
337. On the prospect of a revolution in France; Freneau, IAP
338. Tale of eternity; Massey, BMEP
339. Fable; Mills, NePoAm
340. Dirge for the new sunrise; Sitwell, AtBAP, MoAB, MoBrPo
341. Gardens; Guillen, CoSP
342. Brave new world; MacLeish, AMP, OxBA
343. Break of day; Neilson, BoAV, BoAU
344. To an unborn pauper child; Hardy, CoBMV, LiTB, PoLFoT

345. St. Brendan's prophecy; Unknown, OnYl
346. Bridge you'll never cross; Kleiser, MaRV
347. Brief life is here our portion; Bernard of Cluny, GrCO-1
348. Bright earth moves in destined grooves; Daiches, SiTL
349. Merry go round; Jenkins, GoYE
350. Mother and son; Cary, MOAH
351. Building for eternity; Sargent, BLPA
352. The moment; Smithyman, AnNZ
353. Borrowing trouble; Burns, BLP
354. This will remain; Kirsanov, TrRV
355. To Delia; Daniel, AtBAP, OBSC, SiCE
356. Of human progress; Lucretius, WOL
357. Fortune is like the moon; Sophocles, OxBG
358. The pioneers; Campbell, BoSA
359. The pilgrim way; Oxenham, QP-1, OQP
360. Immortality; Greenberg, LiTA
361. Mysticism has not the patience to wait for God's revelation; Eberhart, MoPo
362. The kingdom of death; Homer, GrPE
363. By an' by; Unknown, APW, BoAN-1
364. Life is but loss; Southwell, SiCE
365. From the foothills; Hillyer, MOM
366. Procrastination; Young, EPP
367. By the babe unborn; Chesterton, AlDL
368. The months; Unknown, ChTr
369. To a child; Longfellow, FaBoEn
370. The world that contains all is ever moving; Caelia, ReIE, SiCE, ToPP
371. Time and eternity; Caelia, OBSC
372. Calendar; Bynner, NP
373. The calendar; Unknown, PCH
374. Calendar rhyme; Watson, BoTP
375. Call me not back from the echoless shore; Unknown, BLPA
376. Midnight; Morike, AnGP
377. Evening voluntary; Wordsworth, CaAE
378. Time is the fire; Schwartz, LiTA, LiTM, MoAB
379. An answer; Cameron, CPG
380. Can life be a blessing; Dryden, ATP(1935 ed.), ElSeCe, SeCePo
381. Cancel the past; Kettle, GTIV
382. Flowering time; Unknown, LaP, LyMA
383. Cassandra; Aeschylus, GrR
384. Cassandra; Bogan, AnAmPo, LA, MAP
385. Cassandra; Euripides, GrR
386. Cassandra; Jeffers, LiTA, LiTM, NePA
387. Cassandra; Robinson, AmPP, ExPO, LiTA
388. Cassandra; Aeschylus, OxBG
389. Cassandra speaks; Ronsard, TrFP
390. Cassandra's lament; Aeschylus, LiTW
391. Cassandra's song of celibacy; Vicente, AnSpL-1
392. Indifference to fortune; Thomson, OBEC
393. A century of peace; Bilsford, BoHiPo
394. Challenge to youth; Longfellow, MaRV
395. The chance; Holmes, NePoAm-2
396. Chance; Unknown, OxBG

397. Change; Coleridge, MoVE
398. Change; Donne, LiTE, ViBoPo
399. Change; Greville, CoEV, OBSC
400. Change; Howells, AA, OBAV
401. Change; Knister, BoCaPo, CaP, PeCV
402. Change; Kunitz, NP
403. Change; Thornton, CIV
404. Change in the year; Wordsworth, BoTP
405. Change should breed change; William Drummond of Hawthorn, BSV, EBSV, OBEV
406. The change song; Skinner, OCL
407. Changefulness; Abo Ishaw, MOOP
408. Changeless; Clark, NLK
409. Changeless; Divell, OQP, QP-2
410. Changeless; Meynell, VA
411. Changeless shore; Ashy, GoYe
412. Changes; Barter, BoSA
413. Changes, Ibn Saud of Al Cala La Real, MOOP
414. Changing world; JAMI, OnPM
415. The changing year; Roberts, DD
416. Cherchez fortune aillerus; Theognis, GrPE
417. Expectations or Destiny; Stanley, ElSeCe, LbBV, OBS
418. Child of today; Buckham, AA
419. The human plan; Crandall, AA
420. Warning to children; Graves, FaBoCh, FaFP, GTBS-1
421. Fortune's wheel; Euripides, GrR
422. Children of tomorrow; Gale, OQP, QP-2
423. Song of hope; LATHBURY, BLPA, CAIP, MaRV
424. Tomorrow's men; Johnson, GoSl
425. A child's future; Swinburne, BPN, EmBrPo, EnLi-2
426. The child's quest; Shaw, NP
427. Life may change, but it may fly not; Shelley, BPN, EmBrPo, EPN
428. The world's great age begins anew; Shelley, AtBAP, CoEV, ERP
429. Worlds on worlds are rolling ever; Shelley, BPN, EmBrPo, EnRP
430. Of time: eternity; Greville, OBS
431. Prophets in their time; Christus, GrCO-2
432. Chronos, chronos, mend thy pace; Dryden, EXpo, MaPO, PoEL-3
433. Perspective of coordination; Ficke, NP
434. The circling year; Graham, PTA-2
435. Belfast, high street; Column, NePoAm
436. The city of the end of things; Lampman, BoCaPo, VA
437. Clarion call; Unknown, BLRP
438. The road; Schneour, TrJP
439. The clock; Baudelaire, LO, TrFP
440. The clock; Docic, LiTW
441. The clock; Monro, MoP
442. The clock; Scarfe, NeBP
443. The clock; Unknown, McMcAg, OTPC(1946), PCH
444. Clock-a-Clay; Clare, FaPON, LiTB, LoBV
445. A clock; Unknown, OTPC(1946)

446. The clock and dial; Ramsay, CBOV
447. The clock has struck; Tucker, PoP
448. Father is coming; Howitt, FAOV, OTPC
449. The clock shop; Shirk, GFA
450. A clock stopped; Dickinson, AnFE, APA, MAPA
451. The clock struck twelve; Machado, TeCS
452. Clock symphony; Nims, MiAP
453. Clocks; Ginsberg, PIAE, TrJP
454. Clocks; Sandborg, CrMA
455. The clock's song; Lathrop, AA, JKCP
456. The migrant; Babock, NePoAm
457. The closing year; Prentice, LPS-3
458. A cold night; Unknown, SiB
459. A cold wind blows; Brockman, NoCaPo
460. Autumn daybreak; Millay, LaNeLn
461. Cold fall; Eberhart, FiMAP
462. Doom's day; Herbert, NBE, SeCV-1
463. Travel song; Wilson, BoAV
464. Come, break with time; Bogan, ATP(1953), MAP, MoAmPo
465. Dawn; Boguslawski, NeTW
466. The call of the spring; Noyes, SUS, VOD
467. Glad day; Untermyer, TrJP
468. Traveller's ditty; deFord, HBMV
469. Song to death; Escriva, LiTW
470. Come, gentle death; Watson, ElL, SiCE
471. Welcome death; Escriva, AnSpL-1, OnPM
472. The season's Spring; Thomson, TCEP
473. The welcome; Davis, HBV, IrPN, LPS-1
474. Whenness of the which; Unknown, BoHV
475. Come, let us eat and drink today; del Encina, OnPM
476. Come love or death; Thompson, AA
477. Serenade; Unknown, AWP, JAWP, WBP
478. Come slowly, Paradise; Kenyon, AA
479. Come, the wind may never again; Bronte, EnLoPo
480. Come tomorrow night; Mathew, BoAV
481. Marriage song; Abercrombie, EMEP, BrBE
482. Expectation; Wratislaw, VP
483. Thysia XVI; Luce, HBV
484. Coming of the spring; Scott, EBSV
485. The coming of dawn; Dennen, NLK
486. Coming of spring; Howitt, RAR
487. Coming of spring; Muller, PEOR
488. Coming of spring; Perry, DD, HBVY, HH
489. Coming of winter; Pasternak, RuPo
490. The coming of wisdom with time; Yeats, TWP
491. Conscience and future judgment; Stubbs, MaRV, PTA-2
492. A caution to everybody; Nash, NePA
493. The hour glass; Johnson, ElSeCo, EnLoPo, GTBS-W
494. Cool is the autumn wind; LiPO, ChLP
495. The cosmic egg; Unknown, BOHV, LPS-3
496. The cosmic fabric; Polonsky, TrRV
497. Cosmogony; Daiches, LiTM

498. Cosmogony; Rickford, FaBoTw
499. Could man be drunk forever; Housman, EG, EmBrPo, EnLi-2
500. What troubled Poe's raven; Bennett, PA
501. If we understand; Unknown, PTA-2
502. If we understood; Unknown, PTA-2
503. Somewhere; de la Mare, FaPON
504. To my mistress; LockerpLampson, VA
505. Counting the days; Tippett, ChBR
506. Spring in town; Bryant, APW
507. Brotherhood; Trent, PGD
508. Course of time; Pollok, LPS-3, EnSW, EtS
509. Cradle song; Macneice, MBP, MOAB, MoBrPo
510. Cranmer's prophecy of Queen Elizabeth; Shakespeare, Henry VIII, V-v, WGRP, EV-1
511. Creation of the infinite universe; Lucretius, LaP
512. Creed; Markham, BLPA, FaBoBe, FaFP
513. Crickets at dawn; Speyer, PFY
514. Crown of days; Unknown, TrJP
515. Crown the year; Havergaz, PraP
516. The jewels; Clarke, MoAB
517. Crystal gazer; Teasdale, MAP, MoAmPo, NeMA
518. Retractions XII; Cabell, HBMV
519. Cursed be the day; Bible, Jeremiah XX 14-18
520. Curses upon this land; Rostand, StJW
521. Belshazzar's feast; Daniel, TreF
522. Sonnet to Dante; Da Pistoia, AWP
523. Dark brown is the river; Stevenson, AlDL, BoChCi, FaBoBe
524. The dead earth; Sampley, MuM
525. The house of life; Rossetti, BMEP, BPN, EPN
526. New things and old; Madeleva; GoBC
527. Dark is the light of prophecy; McGee, PraNw
528. History; Watson, BMEP
529. Twilight; Lawrence, OBMV
530. The darkness gathers; Soderberg, AnSL, OnPM
531. Day shall yet be fair; Thaxter, MaRV
532. Progress; McCord, ImOP
533. To goddess luck; Pindar, GrR
534. Days; Emerson, AA, AnAmPo, AnFE
535. Dawn; "AE," BEL
536. Dawn; Addington, NV
537. Dawn; Baudelaire, WOL
538. Dawn; Ibn Billita, MOOP
539. Dawn; Boguslawski, NeTW
540. Dawn; Bottomley, BoTP, MBP, MoBrPo
541. Dawn; Buchanan, GTSE
542. Dawn; Butchart; PoMa, PoTo, VOD
543. Dawn; Conford, AV, LoPS
544. Dawn; Crouse, ChIP
545. Dawn; Dudek, PeCV
546. Dawn; Dunbar, GoSl, PoNe
547. Dawn; Euripides,GrR, OxBG
548. Dawn; Fenster, NeTW
549. Dawn; Gilder, LPS-2, SN, HBV

550. Dawn; Ibn Muqana, MOOP
551. Dawn; Kilmer, JKCP(1955)
552. Dawn; Logan, HBV
553. Dawn; "P.S.M.," McCG
554. Dawn; Monro, WGRP
555. Dawn; Montgomery, LS
556. Dawn; Rachel, TrJP
557. Dawn; Rimbaud, AnFP
558. Dawn; Ross, BoCaPo
559. Dawn; Scott, CaP, CPG, MaRV
560. Dawn; Sherman, MAP
561. Dawn; Tanikado, JOLD
562. Dawn; Unknown, OBSC
563. Dawn; Valery, TrFP
564. Dawn; William, MAP, MoAB, MOAP
565. Dawn; Yeats, MaPo, MoVE, NP
566. Dawn on the headland; Watson, HBV
567. Dawn and dark; Gale, BMEP, HBV, TSN
568. Aubade for hope; Warren, MAP, MoAmPo
569. Dawn and night; Gay, BeR
570. Solitaire; Howard, CAG
571. Pilots, man your planes; Jarrell, MOAB, MoAmPo(1950)
572. A hillside farmer; Farrar, HBMV
573. Dawn angels; Robinson, HBV, VA
574. Dawn at flying-fish point; Christensen, BoAv
575. Dawn at Liverpool; Strong, BoAu
576. Dawn at the rain's edge; Auslander, MAP, MoAmPo(1942)
577. Sand paintings; Corbin, AnAmPo, LA, NP
578. Triumph, Bonner, OBAV
579. Omnia somnia; Watson, HBV
580. Rain in the hills; Going, VOD
581. The ice flows; Pratt, CaP, OCL
582. Moods; Sill, BTP
583. Dawn has yet to ripple in; Cane, MAP, MoAmPo, PIAE
584. Dawn in Inishtrahull; O'Sullivan, OnYl
585. Dawn in Londson; Khonov, RuPo
586. Dawn in the cockloft; Tablada, AnMP
587. Dawn in the desert; Scollard, PoT, PoTo
588. Dawn in the Everglades; Warlow, BLA
589. Dawn in the town; Unknown, TeCS
590. Improvisation III; Silverman, TwCaPo
591. Forest boat song; Ford, IHA
592. Wings at dawn; Auslander, HBMV
593. Chanson de Rosemonde; Hovey, HBV
594. Mass of love; Unknown, LiTW, TeCS
595. Dawn of day; Browne, ElL
596. Dawn of peace; Noyes, MaRV, QS
597. Dawn on Lake Katrine; Scott, EV-4
598. Dawn on mid-ocean; Wheelook, EtS
599. Dawn on the East Coast; Lewis, FaBoMo
600. Dawn on the Lieure; Lampman, CaP, OCL
601. Dawn on the Summe; Nichols, PoTE

602. Dawn on the wall-head there; MacLeish, AtBAP
603. Dawn over the mountains; TuFu, OnPC
604. Dawn patrol; Chicago, Durham, GoSl
605. May it be; Pasternak, BoRS, TrJP
606. Dawn song; Von Aist, LyMA
607. Dawn song; Davis, CAG
608. Dawn song to waken the lovers; Unknown, LiTW
609. Dawn song; Ibn Sa'id ofin, MOOP
610. Quaeritur; Kipling, PA
611. Omnes eodem cogimor; Ammianus, OxBG
612. The dawn wind; Kipling, PoT, PoTo
613. The dawning; Vaughan, CAW, EV-2, MePo
614. Dawning of the year; Blake, AA, LBAP
615. Dawning of the day; Mangan, GoBC, TIP
616. Dawning of the day; Unknown, OnYl, TIP
617. Dawns; Kreymborg, MAP
618. Dawn's awake; Bohanan, BANP
619. Nature and man; Wang Wei, POP
620. Day before April; Davis, BoTP, FaPON, GaP
621. Day before Christmas; Chute, ChBR
622. Day begins to droop; Bridges, GrBS-D, MBP, MM
623. The day breaks; Clark, ChlP
624. Prayer for the new year; Richard of Chichester, PraP
625. Paper boats; Tagore, AlDL, FaPON, MCCG
626. Day comes; Tu Fu, OnPM
627. Perturbation at Dawn; Maatuk, LiTW
628. Morning; Tou'manian, ArmLP
629. Daybreak; Shelley, GN
630. In the dusk; Ledwidge, VOD
631. Day is coming; Besant, CenHV
632. Day is coming; Morris, BMEP, BPN, EmBrPo
633. At Castle wood; Bronte, ViBoPo, VLEP
634. Day is dying; Eliot, LPS-2
635. Day is dying in the West; Lathbury, OlF, WGRP
636. Lullaby; Chadwick, BOL
637. Day is here!; Barnes, MPB
638. A song of doubt; Holland, WGRP
639. Lullaby; Coates, BOL
640. Day of coming days; Johnson, POTT
641. Dies irae; Thomas of Celano, AA, CAW, HEV
642. Like a whisper; Ayer, GoYE
643. Apostasy; Mills, NePoAm
644. Sunrise in the hills; Fenollosa, AA
645. Day will bring some lovely thing; Crowell, TiPO(1952)
646. Day will come; Strobel, TBM
647. Day will come; Ehrenburg, BoRS
648. Day will not come; Vinse, AnNoLy
649. A song of faith; Holland, WGRP
650. Day will soon be gone; Michibod, AWP, JAWP, WBP
651. Daybreak, de la Mare, AlDL
652. Daybreak; Ibn Burd, MOOP

653. Daybreak; Longfellow, AnNe, APW, BoTP
654. Daybreak; Shelley, GN
655. Daybreak; Spender, LiTL, POTE
656. Daybreak; Untermyer, NV
657. The daybreak call; Haste, PFE
658. Daybreak in a garden; Sasoon, BoTP
659. Daybreak in the city; Callimachus, OxBG
660. Peace; Whitney, PAH
661. Daybreakers; Bontemps, CDC, GoSl, PoNe
662. Secret temple; Seifert, BAP
663. Sonnets at Christmas; Tate, LiTAL, LiTM, NePA
664. The interpreters; Swinburne, BPN, PoEL-5
665. In summer; Towne, HBMV
666. Time of waiting; Hoidobro, TwSpPo
667. Interlude; Wicox, BLP, BLPA, HBV
668. Half of life gone; Morris, EmBrPo
669. Days of birth; Unknown, MoSLBr
670. Earth; Urepont, NeLNL
671. Days that come and go; Cheney, LBAP
672. Of human progress; Lucretius, WoL
673. When we are no more; Lucretius, LiA
674. Dear if you change; Unknown, CoEV, EnLoB
675. Sea of the years that endureth not; Swinburne, EmBrPo
676. Stumbling, we see the future like a cup; Dreyfus. MOAH
677. Fate; Emerson, BAV, RiBV
678. Take up the wings; Lee, NeTW
679. Delphi; Richmond, NeTW
680. Ascent; Blanden, OQP, QP-2
681. Description of time and the year; Tusser, SiCE
682. Despite time; Shakespeare, Sonnets, CXXIII
683. Destiny; Cowley, MeLP
684. Destiny; Arnold, MaRV, PoToHe
685. Destiny; Crane, GoTP, MAP, NeMA
686. Destiny; Emerson, IAP
687. Destiny; Fletcher, MaRV
688. Destiny; Moirns, AA
689. Destiny; Whittier, AA
690. Destiny of nations; Coleridge, ChER, EnRP
691. Devouring time; Shakespeare, Sonnett XIX, AtBAP
692. Song of the dial; Airey, OQP, QP-2
693. Dialog twixt time and a pilgrim; COEV, MePO, NBE
694. The hearse song; Unknown, ABF, AS
695. Dies ultima; Sherman, LBAP
696. Before dawn, de la Mare, AlDL, ChrBoLe
697. Dirge for the new sunrise; Sitwell, AtBAP, MoAB, MoBrPo
698. The confident scientist; Alexis, OxbG
699. Divination by a daffodil; Herrick, OBS, SeCV-L,SoeP
700. Do it now; Braley, BLPA, FaFP, WBLP
701. Do it now; Unknown, BLPA, FaFP, WBLP
702. We go; Wolfskehl, TrJP
703. My hereafter; De Long, WGRP

704. The present; Proctor, WGRP
705. Do not expect again a phoenix hour; Lewis, LiTB, MBP, MoAB
706. To a boy; Unknown, KiLC
707. Do the dead know what time it is; Patchen, MoAmPo
708. It is coming; Mosher, PEOR
709. I doubt of future fces; Elizabeth I, TVPP, OBSC, LEAP
710. Nirvanna· MacInnes, CPG
711. Description of a summer's eve; White, ERP, OBRV
712. Hope; Munch, AnNoLy
713. Dreams come true; Sophocles, OxBG, GrR
714. Quid sit futurum; Unknown, OxBG
715. Of dust in an hour-glass; Amaltheu, LaP
716. Knell; Chapman, MaRV
717. Dying; Holt, ChIP, PGD
718. Dying child; Clare, EnRP, ERP, TrGrPo
719. The small hours; Bethell, OnPM
720. Dying Hymn; Cary, HBV, LPS-2
721. Dying is sweet; Kuzmin, TrRV
722. Dying men; Shakespeare, Richard III, II-i, MaRV
723. Seeking of self; Ivanov, TrRV
724. The dying year; Hill, PEDC
725. The day of days; Morris, BPN, PoVP
726. Epilogue: Credo; Symonds, LBBV, OBVV, OQP
727. Vision; Johnson, MeRV
728. We break new seas today; Oxenham, OQP, QP-1
729. Each new hour's passage is the acolyte; Douglas, BMEP, MBP, MoBrPo
730. Each pregnant oak...; Darwin, PoP
731. Slave; "H.T.R.", CAG
732. Oxen; Jones, BAP
733. Witches song; Coatsworth, PoMS
734. Early light; Bowes-Lyon, AlDL
735. Early moon; Sandberg, LaNeLA, MOAP, PG
736. Early morn; Davies, CH, PoeT
737. The early morning; Belloc, BMEP, BoTP, GTBS-D
738. Early morning in a glade; Dresbach, NP
739. Early morning meadow song; Dalmon, ALV, CH, HEMV
740. Early mornings; Unknown, AS
741. His delight; a p Ewaloh mai, LiTW
742. Early willows; Watson, BoCaPo
743. Earth abideth forever; Ecclesiastics I, FaPON
744. Immortality; Minski, TrJP, TrRV
745. Earth goes on; Unknown, LPS-1
746. Earth will stay the same; Hill, AnAmPo, LA
747. Life's uncertainties; Ecclesiastes XI-1-10, TreFS
748. Mutability; Wordsworth, BPN, EmBrPo, EnLPo
749. Return of the golden age; Virgil, BeR
750. Sibylline prophecy; Virgil, CAW
751. Doubt not a dream; Sophocles, GrR
752. So frail our life, perchance tomorrow's sun; Tsurayuki, OnPM

753. Elegy for all ages; de Rokka, TwSpPo
754. Elegy on the times; Trumbell, APW
755. Embryo; Townsend, AA., HBV
756. Day's affirmation; Read, FaBoTw, TwCV
757. As day begins to wane; Coleman, BoCaPo, CAP, CPG
758. End of being; Seneca, MaRV, WGRP
759. Doomsday; Wylie, CrMA
760. End of man is death; ibn Ezra, TrJP
761. End of the flower-world; Burnshaw, AmAmPo, LA, TrJP
762. End of the seers convention; Fearing, LiTA
763. End of the world; Bottomley, CH, MBP, MoBrPo
764. End of the world; Kresensky, PSO
765. End of the world; MacLeish, AnEnPo, CoBMV, CoV
766. End of the world; Warr, BoCaPo(1948)
767. End of the year; Su T'ung-po, OnPC
768. The end which comes; Arnold, LoBV
769. Final autumn; Johnson, NAMP, NePA
770. Reveille; Phillpotts, POT
771. Endless; Unknown, OnPM
772. The play; Kenyon, HBV
773. Wisdom of insecurity; Eberhart, NePA
774. Endless self; Unknown, OnPM
775. Enjoy the hour; Horace, BeR
776. Well-packed wisdom; Franklin, StaSt
777. Due north; Low, EAS, HBMV
778. Entropy; Pearce, POF
779. Entropy; Spencer, ImOP
780. So go forth to the world; Clough, BPN
781. Have little care that life is brief; Carmen, HBV, PC, VA
782. So at the last I think we must follow; Heyward, NV
783. Emphemera; Unknown, ChLP
784. Fatum supremum; Unknown, OBS, SeCL
785. Time is a thing; Spencer, MBP, MoBrPo
786. Epitaph I have lived through these times and for 1000 years; Desnos, MiCF

(This guide is based on Granger's Index to Poetry, pages 1-323).

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About the ADVENT® Program Directors

DAVID C. MILLER is a nationally recognized Futures Studies and Research practitioner who has been active in the field since 1965. He is a charter member of the World Future Society and a general editor of its publication, *The Futurist*. Mr. Miller's monograph, "Comprehensive Long-Range Forecasting for Management," appears in the *Proceedings* of the Inaugural Conference On Future Research, held in Oslo, Norway in 1967. He led a summer workshop, "Technology and Education in the 21st Century," at California State University, San Francisco in 1966. Since that time he has served as Adjunct Professor in the futures-focused graduate Cybernetic Systems Program, California State University, San Jose. Mr. Miller is a founding partner of Pacific House in Palo Alto, California, a professional policy and planning studies firm organized in 1971.

RONALD L. HUNT, Ed.D. received the doctorate from the University of California, Los Angeles in 1964, following six years spent in developing and managing industry-education programs for a multi-national corporation. During 1966-1967, Dr. Hunt directed a pioneering California-wide policy study on the future of education while serving as a foundation executive and as an educational consultant specializing in media and instructional technology. Dr. Hunt joined California State University, San Jose in 1968 as Director of Institutional Research and Director of Computing. Since then, he has been appointed as Professor of Education and offers graduate instruction and engages in research in the fields of instructional technology and the future of education. Dr. Hunt is also founder of Hunt Productions, San Jose and Senior Editor for Visual Materials, Inc., Redwood City, California.